~CAMPAIGN~ CARTOGRAPHER 3+

Campaign Cartographer 3+

User Manual

ProFantasy
SOFTWARE LTD
Map Making for Gamers

WELCOME

Welcome to the wonderful world of fantasy map-making. Campaign Cartographer is all about helping you take the maps from your imagination and creating a visual representation of them. This manual is the guide to get you started with that process. During these pages I will try to give to the skills and knowledge to successfully use CC3+ for that purpose.

Remy

CC3PUG-12-17

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Mountain Pass

This map depicting a mountain pass was created by Pär Lindström using the CC3+ Mike Schley style.

INTRODUCTION

Campaign Cartographer 3+™ (**CC3+**™) is a mapmaking tool built on a powerful CAD engine. It was developed with the specific intent of enhancing the users' gaming experience by providing specialized tools to create:

- Overland maps in a multitude of styles to fit a variety of genres
- Floor plans including dungeons, caves and starship deck plans
- Urban areas
- Heraldic devices
- War game counters
- Character portraits

CC3+ alone is enough to perform most mapping duties, but joining it with its add-ons will boost its power and expand your potential.

How to use this Manual

Through tutorials and examples, this manual will give you a basic understanding of **CC3+**.

Words in dotted underline are referring you to the sidebar for additional information and definitions. Buttons, dialog box items and menu items are shown in bold text like this: **Drawing Properties** 🖻 The term 'click' means to click the left mouse button. The term 'right click' means to click the right mouse button. The term 'hit' refers you to press the indicated keyboard key, such as in, "hit ENTER ", and the term 'hover' means to hold the cursor over the indicated item without clicking. An alert symbol 🛈 is displayed where information of particular importance appears. Text to be entered into the **CC3+** command line is written in a `MONOSPACE` font.

Not interested in Overland Maps?

Campaign Cartographer 3+, the core product, is primarily designed for creating overland maps, while the various add-ons are designed for other types of maps, like dungeons, cities or starships. If you are not interested in overland maps, but rather one of the map types offered by an add-on, it might be tempting to just skip this entire manual. However, all the add-ons build on the principles in the core product, **CC3+**. Even if you are not going to make overland maps later, it is highly recommended that you work through the overland tutorials in this manual, as they will teach you important skills that you will need when working with the add-on of your choice.

Do not underestimate the power of **CC3+** however. Even if it is primarily designed for overland maps, you can really make any kind of map you want with it. The add-ons make it easier to create specific kinds of maps, but there is nothing preventing you from drawing a city without City Designer 3™ (**CD3**™) or a dungeon without Dungeon Designer 3™ (**DD3**™). You will need to do more work yourself when you do not have the tools and artwork the add-ons provide, but after reading through this manual, you will have learned how to create such tools yourself.

Your Copyright

As the creator, you retain the copyright to the drawings you produce using **CC3+**. You may freely distribute them, both privately and commercially, with the following proviso—you may not release maps which, in the sole opinion of ProFantasy Software, are for the purpose of redistributing **CC3+** symbols. Read the license agreement for details.

Think about **CC3+** as being a word processor, the symbols are fonts and the drawings are your documents. Consider that you can use a font in a word processing program to create a document. The document is yours and you retain the copyright to it, however, you do not hold the copyright to the font. You cannot distribute the font nor can you include the font in a font collection for distribution. The fonts, like **CC3+**'s symbols, are tools for you to use in order to create something that is uniquely yours.

Getting More and Getting Help

This manual contains a lot of tips that will help you in your mapmaking, but it cannot cover everything. Perhaps you have your own ideas, but need help getting the map the way you envision it. Maybe you are just looking for ideas? In any case, the ProFantasy community is the place to find help. The community forum can be found at http://forum.profantasy.com/. You'll find both helpful community members, as well as ProFantasy staff here.

Another great resource is the user tutorials page. Here you can find both regular tutorials, as well as video tutorials. Just visit http://www.profantasy.com/community/user_tutorials.asp. If you are looking for inspiration, you can find a great collection of user-contributed maps at http://www.profantasy.com/library. Note that since CC3+ is a very recent product, the majority of resources found here will be for previous iterations of the Campaign Cartographer series. But don't despair, old maps and symbols still works in CC3+, and most old tutorials are still relevant. Even though Campaign Cartographer has improved a lot over the years, the core functionality still works the same way.

For technical problems, please visit the ProFantasy technical support area located at http://www.profantasy.com/service/technical.asp.
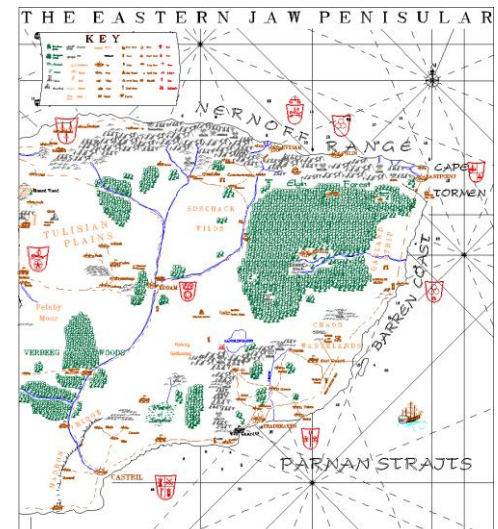

The Eastern Jaw Peninsula

This map in the new CC3+ Mike Schley style is a remake of a map the roots of which go back all the way to the very first version of Campaign Cartographer

The Mike Schley style is available in your CC3+ install.

The image below is from the original DOS version of Campaign Cartographer from 1993 and depicts the same area.

WHAT'S NEW IN CC3+

If you are familiar with **CC3** already, you'll probably know a lot of the tricks in this manual, and might not want to read familiar information again. In that case, this chapter provides a short overview of the new features of **CC3+** compared with **CC3**.

If you are new to the Campaign Cartographer range of software, or if you are upgrading from **CC2** Pro or earlier, you'll want to skip this chapter, and read the rest of the manual instead. All the new features detailed in this chapter will be explained properly in context in other places of this manual.

Note that the new features described here are features that you as a user is likely to interact with directly. **CC3+** has many other changes under the hood which is not directly observable.

New Style

In addition to the bitmap style that was included with **CC3**, **CC3+** also include a new beautiful bitmap style by Mike Schley, giving you more options for the visual style of your maps. You'll find this new style in both imperial and metric variants in the familiar new map wizard as well as predefined templates if you prefer to use these. This style is available both in full color, and a Black & White variant.

Print Wizard

CC3+ has quite a few options for printing, like multi-page printings, overlaps, sheets, drawing distance and so on. Getting all of these settings right can sometimes be a bit challenging. The new print wizard is designed to help you get those options right every time. To access the print wizard, simply right click on the print button, then select Print Wizard. If you wish to learn more about the wizard, check out the chapter on Printing Your Drawing on page 41.

Drawing Tools in Symbol Catalog Window

In earlier versions of Campaign Cartographer, Symbols and Drawing Tools lived in two different places. Symbols had their symbol catalog window to the left of the drawing, while drawing tools had their own dialog that popped up listing available tools based on the button you clicked. While the "old way" of accessing drawing tools still work, drawing tools can now also be included in a symbol catalog. This means that drawing tools can more easily be grouped along with their related symbols. For example, if you click the Vegetation button, now the symbol catalog window will show both trees and other vegetation symbols, as well as forest and other vegetation-related drawing tools.

Floating Prompt

The prompt (command line) at the bottom of the **CC3+** window can be easy to overlook, even if it is a very important part of **CC3+**. Through the options dialog (**Tools → Options**), you can now enable the floating prompt. This prompt follows your mouse cursor, making sure the prompt is always highly visible. It can even show more information about the task at hand compared to the command line, due to more available space.

New Data Directory

In earlier versions of Campaign Cartographer, all the program data was stored in the installation directory. This included files such as templates, symbols, fills and settings. Many of these files are user-editable, and the operating system prefers that such files are stored in dedicated data directories, not in a program directory. **CC3+** has moved all such files to the ProgramData directory instead, in a subdirectory called CC3Plus. It is in this directory you will find menu files for editing, and where you can store your custom symbols, templates and fills. You should never need to go into the **CC3+** installation directory anymore, and all references to it in older instructions should be read as to refer to the ProgramData directory instead. Note that the location of the ProgramData directory varies between versions of Windows. In newer versions of Windows, it is most commonly found at **C:\ProgramData**, while in older versions of Windows, it is **C:\Documents and Settings\All Users**. If you are unsure what this directory is called and where to find it on your system, simply hit the Windows key and the R key simultaneously to bring up the **Run** dialog, then type in %ALLUSERSPROFILE%\ProFantasy\CC3Plus in the input field, and hit OK. This will bring up an explorer window on this directory, no matter where it might be located (You can also type this

in in the search box on the start menu, on the start screen, or in the location bar of any explorer window). Note that this trick will only work if you haven't change the default location of the **CC3+** data files, which you can do from the installer. If you did change it, simply navigate to whatever directory you chose during install.

Large Toolbar Icons

CC3+ reintroduces large toolbar icons. These can be enabled if you feel that the default buttons are too small for you. This is an especially useful alternative if you run **CC3+** on a small screen with a high DPI, such a tablet computer. By default, this option is enabled, but you can toggle large toolbar icons from the **Select Screen Tools** dialog, which is shown by clicking **Screen Tools**.

Other Improvements

There are also several other improvements, some visible, like improved dialogs, and some under the hood, like improvements in the image export routines and effects routines. These improvements makes **CC3+** both faster and more stable than it's predecessor.

Syrlinia and the Isles of Dread

This drawing was created in CC3 by **Aaron Stubbs**. It uses elements and techniques described in **Issue 04- Sarah Wroot** Style Pack in **The Cartographer's Annual 2007**.

This style is provided in the Cartographers Annual Volume 1 (http://www.profantasy.com/annual/ 2007/)

INSTALLATION

Before starting your CC3+ installation, make sure that you are logged into an account with administrator privileges, or the installation will not be able to run.

Depending on how you acquired CC3+, you will start the installation wizard in one of two ways

- If you have the download version of CC3, just double-click on the **CC3PlusSetup.exe file** you downloaded from ProFantasy.

- If you got the CD-ROM version, just insert the CD into your drive, and the installation will normally start automatically. If it doesn't, you will need to start it manually. This is done by double-clicking the **My Computer** icon on the desktop, then double-clicking on your CD-ROM drive (usually D: or E:). Finally, double click on the **CC3PlusSetup.exe** file on the CD

Unless you have User Account Control (UAC) disabled, you will get a prompt asking you if the CC3+ installer should be allowed to make changes to your computer. You will need to say yes to this to properly install CC3+.

Installation Wizard

The installation starts by verifying the setup package. During this set you will see a small dialog with a progress bar on your screen. Once this is done, this dialog will disappear, and after a few seconds the installation wizard will appear to take you through a series of screens.

1. The first screen welcomes you to the installer, and doesn't provide any options. Click **Next >** to continue.
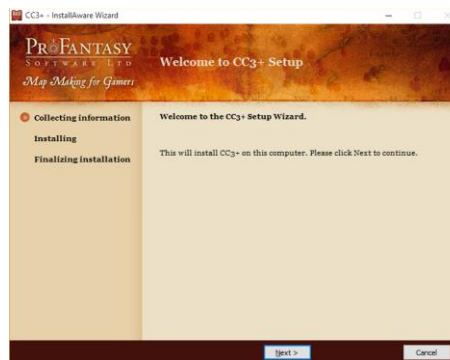
2. Make sure to read the license agreement. It details what you are allowed to do with the software, and what you aren't allowed to do. If you wish to read the license agreement again later, you can either find it in the CC3+ Help file (search for "license agreement"), or on the ProFantasy website at http://www.profantasy.com/service/license.asp

    If you accept the license, place a checkmark in the **I accept the license agreement** box and click **Next >**. Note that if you do not accept the license, you are not permitted to continue the installation.

Setup File

Depending on your computer settings, the filename might not have the .exe extension at the end visible.

CC3PlusSetup.exe

3. Enter your serial number. If you have an internet connection, the installer will verify your serial number online. If not, it will present you with a page containing a URL and a code. Use a computer connected to the internet, visit the URL provided and enter the code. You will then get a confirmation code to type into the installer. Once this is done, you will be able to continue the installation.

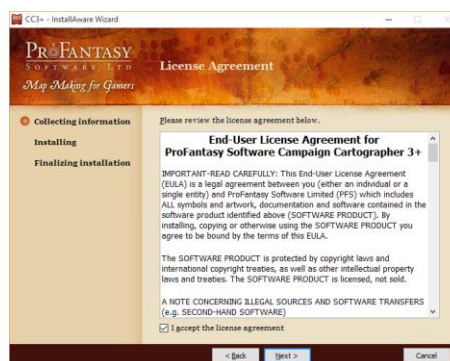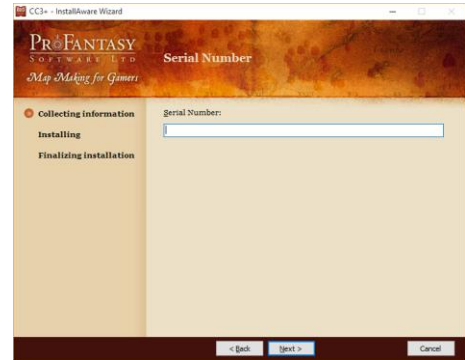4. Next up is the installation location. The program itself will always be installed into **C:\Program Files (x86)\ProFantasy\CC3Plus**, but you have a choice where to put the user-customizable data, which makes up the bulk of the installation.

   The default location for this data is **C:\ProgramData\ProFantasy\CC3Plus**, but if you are low on disk space on drive **C**, you should place it somewhere else. The numbers below the path shows how much space it will require, but keep in mind that if you are planning to install any add-ons or add large amount of custom artwork, this directory can easily swell to 10 times this size, so plan ahead, especially if you have a small **C**-drive.
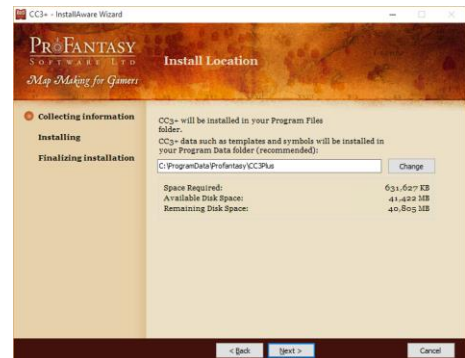
   Note that the paths listed above are how they will appear on an English 64-bit recent version of Windows. If you have non-english, 32-bit or an old version of Windows, the default path will be slightly different.

5. The installer now asks for the name of the folder on your start menu/screen that will contain the shortcut icons for **CC3+**. If you provide the name of an existing folder, the icons will be installed into this, otherwise a new folder with the specified name will be created. You can also select if this folder will appear on your start menu/screen alone, or on the start menu/screen of all the users of this computer.
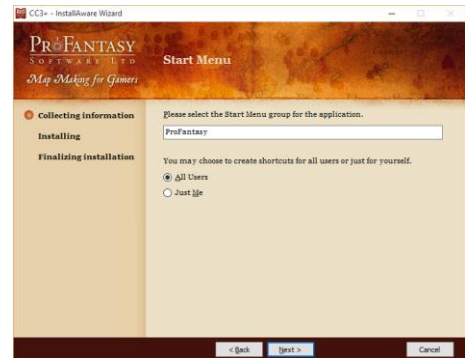
6. Ready to install. Click **Next** > to start installing.
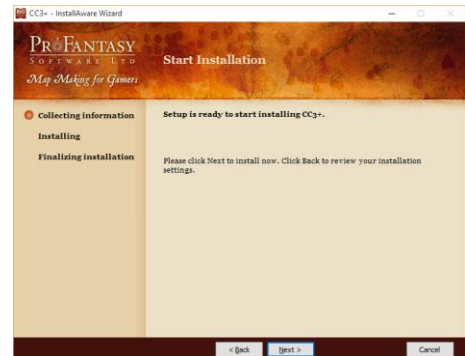
7. This step will show while the installation wizard installs **CC3** on your computer. There is a progress bar to the left where you can monitor the installation progress. Once it is done, it will progress to the next screen automatically.

Note that this step can take several minutes
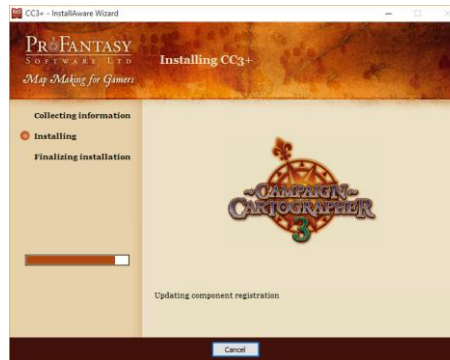
8. And you are done. Leave the Run CC3+ now box checked to launch **CC3+** immediately, or uncheck it if you prefer. Then click **Finish** > to complete the installation.
Note that the installer may appear unresponsive for a little while after clicking **Finish** > while it does some final cleanup tasks.
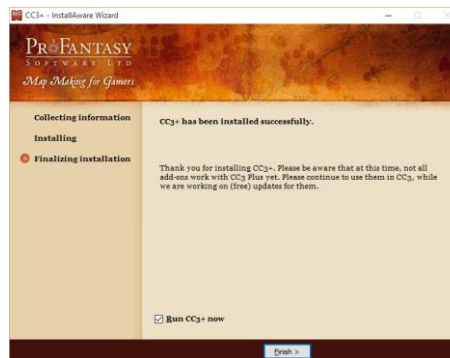
9. Once CC3+ is installed, you can launch it either from the icon on your desktop, or from your start menu/start screen.

After installing CC3+ you should visit the ProFantasy website to get the latest updates for the software. Updates are available from the registration page at http://www.profantasy.com/service/entrance.asp.
If you haven't created an account already, you should start by doing so by going through the registration process on that page.

Once registered and logged in, click the **Downloads & Updates** tab to see your available downloads. Click the little arrow to the right of the Campaign Cartographer 3 Plus entry on this page to access the CC3+ downloads. Here you can grab and install the latest update (Currently **CC3+ Update 20** as of this writing). Make sure you grab the CC3+ update and not the CC3 update, which may also be listed here.

For Windows XP users: While CC3+ works fine in Windows XP, Windows XP lacks support for some of the changes in the latest patch, so the latest version of CC3+ available Windows XP is version 3.84, delivered with update 17a. If you used the latest installer available from the ProFantasy website, you'll already have this version, but you may need to install this update after installing any add-ons.

Latest Updates

The updates for CC3+ updates both the core program, as well as any add-ons you have installed. It is therefore important to (re-)install the latest update after installing any add-ons to update the files installed by those add-ons, even if CC3+ was already updated to the latest version.
The update also fixes some issues (like menus and macros) every time it is run, so just re-running the update is always a good first troubleshooting step. It is completely safe to run the update multiple times.

Gamma Regina System
7651 AD
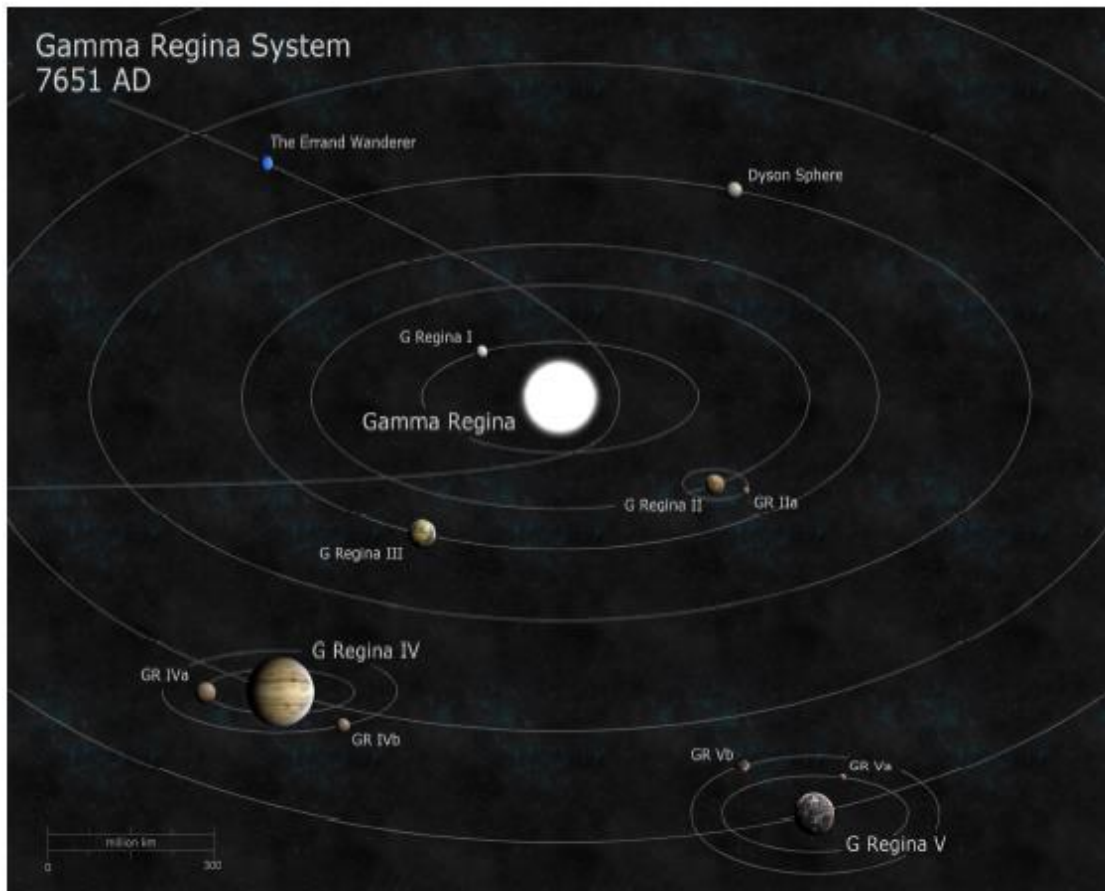
Gamma Regina System

This view of a solar system was created in CC3 by Ralf Schemmann. It uses elements from Issue 22-Star Systems in The Cartographer's Annual 2008.

This style is provided in the Cartographers Annual Volume 2 (http://www.profantasy.com/annual/2008/)

Tendril's Oak Inn

This drawing was created by **Ralf Schemmann** with **CC3** and the **Dungeon Designer 3™** add-on. Ralf used techniques explained in **Issue 3-The Tendril's Oak Inn** in **The Cartographer's Annual 2007**. It also uses map linking techniques as described in **Issue 17-Creating a Map Atlas** in **The Cartographer's Annual 2008**.

This style is available with the Dungeon Designer 3 product.

Tendril's Oak Inn
First Floor

1 Outhouse Roof
2 Open to Below
3 Hayloft
4 Corridor
5 Closet
6 Women's Bunkroom
7 Down to First Floor
8 Gallery
9 Stairs to Attic
10 Lavatory
11 Dining Room
12 Corridor
13 Double Room
14 Double Room
15 Bathroom
16 Single Room
17 Single Room
18 Bunkroom
19 Bunkroom
20 Single Room
21 Single Room
22 Trapdoor to Attic
23 Shed Roof

Go To
Cellars
Ground Floor
Second Floor

Campaign Cartographer 3+

Getting Started

CC3+ is easy to use, but there are a few things that make it different from some other software, especially raster software. If you can grasp these simple concepts early on, you'll find CC3+ much easier to learn. If you've used raster programs such as Photoshop® or Paint Shop Pro® in the past, set aside what you know. CC3+ is going to be different for you. If you go into this as a new learning experience and don't try to drag raster techniques with you, the learning curve will be shortened considerably. If you are familiar with CAD software, you'll find that CC3+ has a lot of familiar concepts.

Entities

CC3+ drawings consist of drawing objects called entities. These entities have properties, some visible and some invisible. You can select entities for editing based on combinations of these properties.

Maps

CC3+ maps are drawn using vectors. Unlike raster programs, CC3+ stores its maps as lists of drawing objects such as polygons, circles, images and lines. This is both faster and more compact. Even very large maps will be contained in small file sizes.

Double Click and Drag

None of CC3+'s functions expect the user to double click or "drag" the cursor. All functions require single left click, single right click, or a typed input.

Sheets and Layers

If we think about the transparent pages in an old anatomy book, we get a good idea of how CC3+ uses Sheets. Each sheet holds specific parts of the image that are stacked in a determined order. As we turn the transparent pages of the book, each sheet builds on the image. The skeleton is on the bottom page, the organs on the next page, the muscles on the next page, and the skin on the top page. In your mind, you may be thinking, 'no, those are Layers'. Not so in CC3+. In CC3+, those are Sheets.

To get an understanding of Layers in CC3+, think of CC3+'s Layers as 'categories'. CC3+ layers are simply collections of like objects under a category heading. These categories allow us to arrange and select entities in an organized fashion. Understanding the difference between and the use of Sheets and Layers in CC3+ goes a long way to reducing that learning curve.
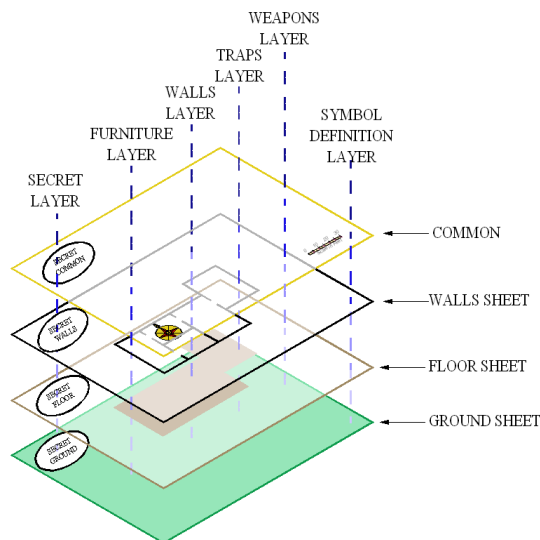

Learning Tips for New Campaign Cartographer Users

We know now that CC3+ is not like the raster or paint programs that users may be familiar with. Let's look at some basic beginner learning tips to get us started.

1. **Choose what to do, then select what you want.**
   In most Windows® programs, you choose the entities that you want to edit, then choose the commands that you want to apply to them. CC3+'s default selection method is the reverse of this. In CC3+, you to choose an editing function, and then select the entity you want to edit. For example, to remove an entity from the drawing, you would click **Erase** 🧽 then click on the entity you want to erase. With the desired entity selected, right click then select **Do it**. This may seem awkward at first, but once mastered, it is far quicker for mapping than the standard Windows method of select then edit. Once a command has been executed, click to repeat it. Hit ESC or select another command to cancel the current one.
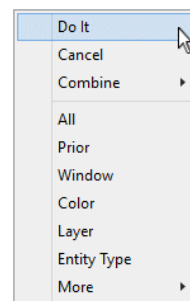
Properties

Each entity in a CC3+ drawing has certain properties. All entities have color, line width, line style, fill style, layer, sheet, and pen width even if the property doesn't seem to affect the entity's appearance

Organized Fashion

By putting all the structures on the STRUCTURES layer and all the mountains on the MOUNTAINS layer, we can keep the entities organized. Layers do not dictate order. You can have some mountains on top of some structures and elsewhere in the drawing, you can have some structures on top of some mountains. The entities on the Layers are simply collected together under a category heading.

Selecting Entities

In CC3+, don't drag the mouse. You get finer control without dragging - click to start a move, then click to finish.

2. Learn how to select, and how to reuse a selection.
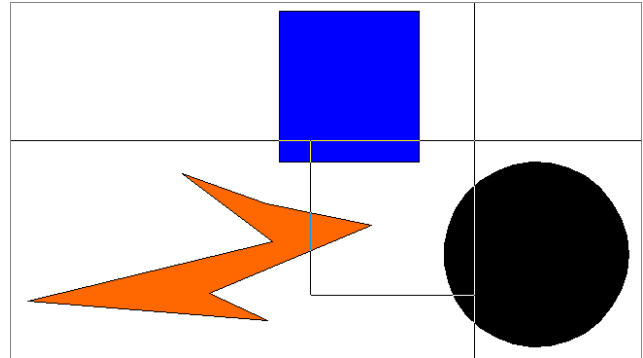When an editing command is clicked, the cursor changes to a pick cursor.

- Selecting a single entity

  The square on the cursor is used to select the desired entity. Select the entity by clicking the box on the pick cursor on the edge of the entity. When the entity is selected for edit, it turns grey. You would now right click, then select **Do it** to execute the editing command.

- Selecting multiple entities

  As with selecting single entities, you could continue to use the pick cursor to select entities on which to apply the editing command. **CC3+** will select all entities it finds within the pick square each time the user clicks the drawing. If **CC3+** doesn't find any entities within the pick box when clicking in the drawing, it will place the first corner of a selection window. Open the selection window to include all desired entities. In this example, all three entities—the circle, the square and the zig-zag will be selected because their edges are captured within the selection window.
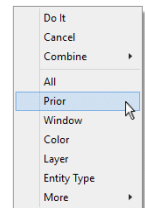
Selection Window

Don't drag the cursor. Click to start the window, move the cursor to the desired opposite corner, then click again to complete the selection window. This results in a much greater precision when mapping.

- Deselecting entities

  To deselect an entity out of a group of selected entities, hold down ⎇CTRL while clicking to select the entity we want to remove. Clicking selects the entity. Holding down ⎇CTRL while clicking deselects the entity.

- Reusing a selection

  There may be times when we want to reselect the same entity or entities in a series of commands. For example, we may want to **Move** and then **Scale** the same group of entities. To do this quickly, select the desired entities during the **Move** command. Once **Move** is completed, click **Scale**. Instead of reselecting all the same entities again, right click then select **Prior**. This will reuse the same entities for the **Scale** command as were selected for the **Move** command.

Command Prompt

In **CC3+**, the command prompt is found in two places. It will always be visible as a field in the lower left section of the screen, but if enabled, you will also have a floating command prompt following your cursor. The floating command prompt can optionally also be placed into an expanded mode, where it shows extra information.

Floating Command Prompt

You can enable or disable the floating command prompt by selecting **Options** form the **Tools** menu.
From here, you can also toggle the expanded information mode.

The **Command Prompt**, is where **CC3+** asks you for input or instruction, gives you instructions, and provides you with information about options.

Watching the Command Prompt is essential, even for expert users, since this is the communication link between you as the user and **CC3+**.

Clicking Buttons

In **CC3+**, left clicking a button will launch the default command. Right clicking the button will open a menu with all options and settings associated with that command. For example, we can click **Scale** to launch the default scale action or we can right click the **Scale** button to open a menu with other **Scale** options and settings.

Scale
Non-visual Scale
Non-visual ScaleXY
Scaled Copies
Scale Symbols in Map
Cursor Options...
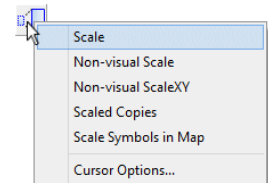
Getting to CC3+ (Overland Mapping Mode)

After add-ons are added to your core program, you might find that the menu and toolbars are not what you expect. This is because each add-on has its own menu and toolbars. You can swap back to the core **CC3+** configuration from any add-on by clicking **Map Menu** on **CC3+**'s **File** toolbar.

CC3+ Interface Overview

The **CC3+** interface may look a little complex at the first glance, but as you learn to utilize, you'll find that it is both very powerful, and coherently organized.
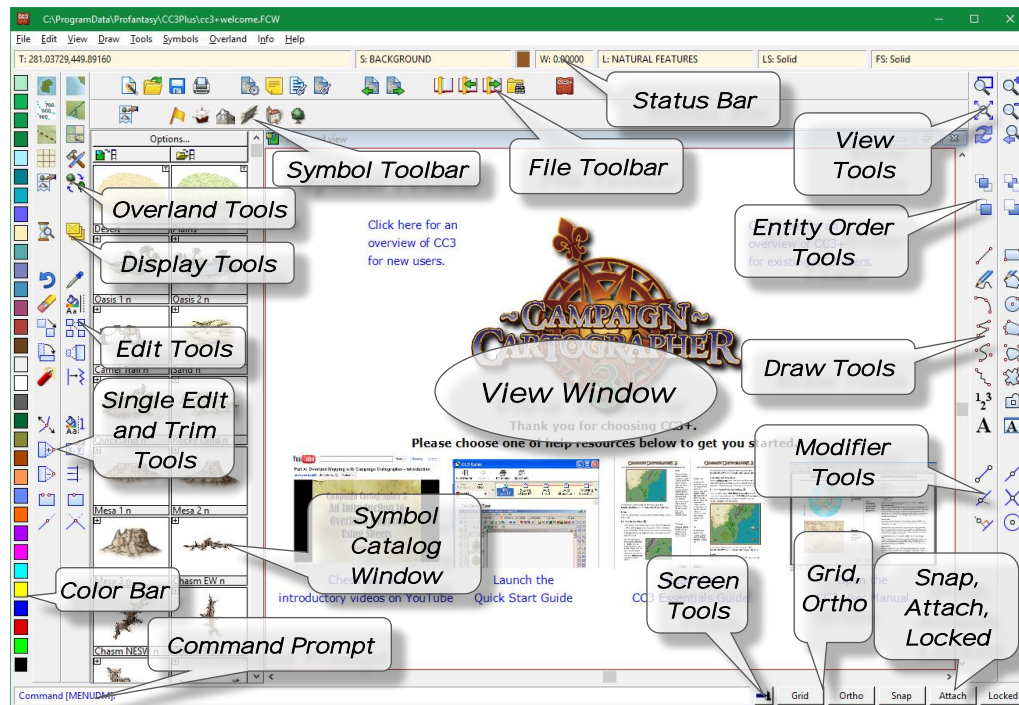
Status Bar

This bar shows the current status and settings for tools that will be applied as properties to the entities added to the drawing.

Color Bar

The **Color** bar is a quick way of setting the current color. It contains a selection of frequently used colors. If you need colors not in this bar, you can click the color swatch in the **Status Bar**.

File Toolbar
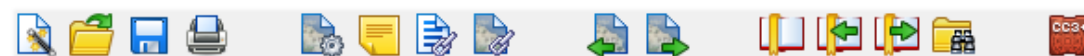
The **File** toolbar contains file function and navigation commands.

Symbol Toolbar

The **Symbol** toolbar holds the buttons that open the various symbol catalogs associated with the drawing.

Symbol Catalog Window

The symbol catalog window displays the symbols and drawing tools matching your current drawing style and type as selected on the symbol toolbar.

View Window

It is in this **View Window** where the current drawing in progress is displayed.

Symbol Catalog

Command Prompt Line

`Command []:`

The Command Prompt is the communication link between you as the user and CC3+. Watch this line as you work in CC3. The **Command Prompt** displays the current command, it will prompt you as to what input or action CC3 is looking for from you, and your input to CC3 is typed into this line.
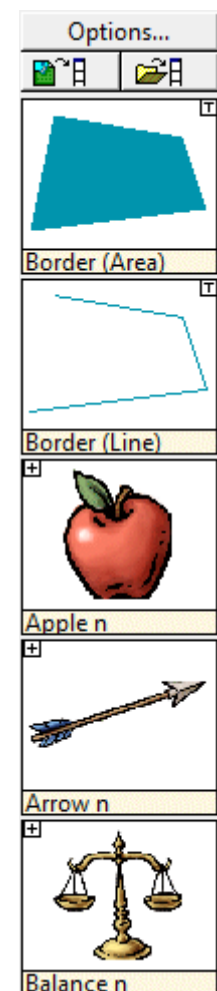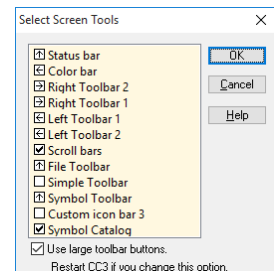
Note that if you haven't disabled the floating command prompt, you will have the command prompt content appearing right next to your cursor as well.

`Command [DRAWTOOLSP]:`

In this manual, we'll often quote what the prompt says. However, note that if you have expanded text on, that is too much text to reproduce here, it would only be confusing. Instead, this manual will always quote the standard prompt text, this is the same text as appears at the **Command Prompt Line** at the bottom of the screen. So if you are using expanded text for your floating prompt, just look down at the **Command Prompt Line** if you need to verify that you have the correct prompt.

Snap

You can set snap, locking or cursor snap on or off in the middle of any command using these buttons.

Screen Tools

Screen Tools allow the user to customize the interface by deciding which tool bars will be displayed at what positions around the **View Window**. You can also choose between large or small toolbar icons by accessing this dialog.

Significant Point

The significant point can be, for example, the endpoint of the entity. If no entity is found, it behaves as if Attach is off. Attach is ignored when you type coordinates or use a modifier. Attach has precedence over Ortho and Snap locking.

Grid and Ortho

Grid `Grid` toggles on and off a dot grid display over the **View Window**. This grid does not print. It is to help judge distances and aid in entity placement in the drawing.

When selected, **Ortho** `Ortho` (orthogonal locking) temporarily forces new lines to be exactly horizontal or exactly vertical.

Snap, Attach and Locked

When **Snap** `Snap` is selected, entities added to the drawing will lock to coordinates at a spacing that you choose.

Group Locking

CC3+ can cause unrelated entities to be treated as a single entity. These can then be selected and edited as a whole. These collections of entities are called groups.

When **Attach** `Attach` is selected, you can select a point anywhere on an entity, and the point will snap to a significant point on that entity.

Locked `Locked` toggles group locking.

Overland Mapping Tools

This button group consists of CC3+'s Overland mapping tools and symbol selection commands. Click the buttons to launch drawing tools for each purpose or right click to open all available drawing tools in that tool family.
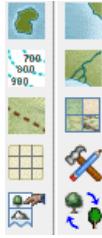
Entity Order Tools

The commands grouped in these **Entity Order** buttons allow the user to reorder entities in the drawing by changing what entities are in front of or behind other entities.

View Tools

The **View Tools** button group contains the commands that allow the user to change views in the current drawing by zooming in and out and by changing the central focus of the drawing.

Display Tools

These commands control how images and effects are displayed in your maps.

Edit Tools

These tools let you manipulate selections of entities, changing their appearance, placement and shape.
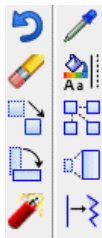
Draw Tools

The **Draw Tools** button group contains the commands that allow the user to draw custom entities, add number labels and add text to the drawing.

Do not confuse these basic Draw Tools with CC3+'s drawing tools. The latter are more complex tool presets that contains predefined line and fill styles, and are used to easily draw larger, more specialized entities like landmasses or forests.

Single Edit and Trim Tools

The tools in this group are editing commands that ask for, and operate on, single entities at a time.

Symbol Display

The elements of the **Symbol Display** area of the full interface include the **Symbol Display Window** and buttons to access various symbol catalogs and symbol display options. The **Symbol Display Window** shows the current symbol catalog. It is from this window which the individual symbols are selected for placement in the drawing.

Modifier Tools

The commands in the **Modifier** tools group work within other commands, allowing the user to lock to specific points on existing entities when you draw or edit other entities. Use these modifiers whenever you would click to an exact point. The use of modifiers is important for precision drawing.

File Locations and Formats

CC3+ uses several file formats in our drawing operations and most are stored in specific folders within CC3+.

Paths

As a user, you need to be aware of the two main folders used by CC3+. The first is the installation directory used by CC3+. By default, this is **C:\Program Files (x86)\ProFantasy\CC3Plus**. This is referred to as the programs installation directory.

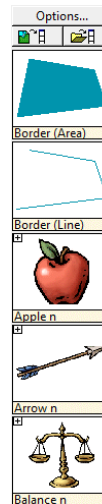The other folder is far more important, and this is the folder where CC3+ keeps all its data. By default, this is **C:\ProgramData\ProFantasy\CC3Plus**, but you had the option to change this in the installer, so it might be different for you. This folder is referred to as the programs data directory. Note that the main ProgramData folder is hidden by default.

File Types

A **FCW** file is a map or drawing that has been created in CC3+. When we draw and save the file, it is saved as an **FCW**. When a drawing is first saved, the save dialog will default to the last location used, which is usually the CC3+ Data directory.

An **FCT** file is a template. A template is used to initialize new drawings. Predefined templates are stored in the **Templates** folder in the data directory.

The **FCS** files are symbol catalog files. Symbol catalog files contains references to external images used for symbols, as well as various settings related to these symbols.

Drawing tools are **DTO** files. These files are stored in **System\Drawtools** in the data directory.

Bitmaps and other image files used to create fills are stored in the **Bitmaps\Tiles** folder in the data directory. The **Bitmaps** folder is also where we'd want to add folders to store image files that we want to use in our maps. Bitmap files used for symbols are found in an appropriate subdirectory inside the **Symbols** directory. Most bitmap images used with CC3+ are in **PNG** format.

The Autosave Feature

CC3+ can automatically save your work at predefined intervals. The default setting for autosave is to prompt you to save every 5 minutes, but if you so desire, you can turn off autosave completely, or have it automatically save without prompting first. To access the autosave option, select **Autosave...** from the **File** menu.

To open the last autosave, you can simply select **Open Autosave Drawing** from the **File** menu.

The most important bit of information to know about autosave is that it always saves to the file named **AUTOSAVE.FCW** in your CC3+ data folder. So, if you ever need to load an autosave (for example after a crash), remember to load this file, and not the file you were working on. CC3+ only save to your working file when you manually click **Save**. Since there is only one autosave file, you also need to take care. If you believe you will need the contents of this file, make a copy of it, since the file will be overwritten during the next autosave. In case of a crash, it is important to load (or copy) this file immediately, so that you don't overwrite your valuable autosave with a new map.

Getting Started Review

- You hold the copyright to original maps you make in **CC3+**.

- All entities in **CC3+** have properties which include Line Style, Fill Style, Color, Line Width, Pen Width, and Layer.

- **CC3+** is different than a raster program. Leave your raster techniques behind when approaching **CC3+** and your learning curve will be less steep.

- In **CC3+**, you choose what to do, then select what you want.

- Actions in **CC3+** are performed with right clicks and left clicks. Don't double click or drag the cursor.

- Left clicking a command button launches the default action. Right clicking the button opens a menu of related commands and settings.

- Watch the Command Prompt. It is the communication link between you and **CC3+**.

The Island of Muirgh

Example map in the **CC3** Overland style drawn by **Erik Nolander** using the techniques in this manual

This style is available with your **CC3+** install.

13th Age

This map from the 13th Age roleplaying game (http://www.pelgranepress.com/ ?cat=248) from Pelgrane Press was drawn in the **CC3+** Mike Schley style.

This style is available with your **CC3+** install.

CC3 Black & White Overland Style

This example map showcases the **CC3** Overland Vector BW style.

This style is available with your **CC3+** install, along with a color version.

Viewing and Navigating

Let us have a look on how to open and navigate existing maps. For this, we will use some of the tutorial files that is supplied with CC3+. These are all stored in a folder named **Tutorials**, located within the main CC3+ data folder. The files belonging to the CC3+ manual is stored inside a subfolder, named **UserManual**. Various other add-ons will create their own subfolders for their tutorial maps. You can also find various example maps in the **Examples** folder.

File Manager

CC3+ allows you to preview drawings and map notes before opening the drawings. We can even browse through whole folders using the **File manager**.

When we click **Open**, the **File manager** launches. From here we can preview and select a drawing to open.

Use the **Look in** drop down list and the folder buttons to navigate to the folder which contains the desired drawing. **Open** loads the drawing selected.

Auto-preview

With **Auto-preview** checked, the selected map will automatically be previewed in the **Preview** window.

Auto-zoom all

With **Auto-zoom all** checked, the whole drawing will appear in the preview window, regardless of current view in the drawing.

Use Browse file

If there is a browse file for the current folder, checking this box allows CC3+ to load the preview from that file. This is a quicker method for browsing files.

Preview

If **Auto-preview** is not set, click to select a drawing from the list, then click **Preview** to display that drawing in the **Preview** window.

Zoom all

If **Auto-zoom all** is not checked, clicking this button zooms the preview to the extents of the drawing.

Show all

Clicking this button will preview the drawing in the **Preview** window with all layers visible.

Browse

Click **Browse** to open the **Browse files** dialog. In this dialog, whole folders of drawings can be previewed at once.
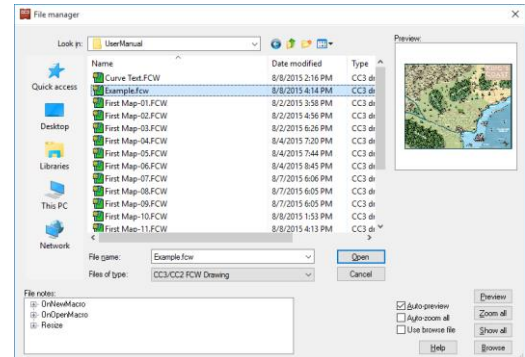

CC3+ Data Folder

During the installation of CC3+, you were allowed to place the data folder in a location of your own choosing. The default location is C:\ProgramData\ProFantasy\CC3Plus. If you didn't change the location during the installation, you will find all CC3+ data files there.

Selected drawing

Double-clicking a drawing file also will open it.

Browse File

The Browse file is created by caching the drawings in the Browse files dialog. Click Browse, then click Cache all to cache the drawings. This takes up disk space but makes future browsing quicker.

Layers

Layers represents a way of grouping entities in the drawing, and are discussed later in this section

Preview

If there are many drawings in the folder, this may take a moment to open.

Viewing the Drawing

1. On the **File** toolbar click **Open**.
2. Browse to CC3+'s **Tutorials\UserManual** folder, then select **Example.fcw**.

Once a drawing is opened, two things are going to directly affect what we see — one is which sheets and layers are visible or hidden and the other is the effects settings.

Effects Settings

The **CC3+** sheet effects are one of the most exciting differences over **CC2** Pro. In **CC3+**, we have the ability to blur, make transparent, add glows, and a variety of other effects to make our drawings extraordinary. These effects, however, can slow us down while we're working. Save the effects for the final presentation by turning them off until we're ready for them.

To turn on or off effects in the current drawing, click **Sheets and Effects** to open the **Drawing Sheets and Effects** dialog. Set the check from the **Activate Sheet Effects** box to turn on effects, or clear it to turn them off, then click **Ok**.

To control the global status of effects when a map is loaded, go to the **Tools** menu. Select **Options**, then set the radio knob for **Effects on load** to the desired setting. The **As drawing** setting means that only maps which are set to have effects on load on will have their effects enabled.

Hidden Sheets and Layers

There are times when, for various reasons, the creator of a drawing will need to hide sheets or layers, and sometimes both in the same drawing. When we open a drawing to view it, those hidden sheets and layers are hidden from view. To reveal them, we need to go into the respective dialog and make them visible again.

Hidden Layers

If we click on the **Layers** indicator L: SYMBOL DEFINITIO , the **Select Layer** dialog opens. In this dialog, we find a list of layers in the current drawing. The boxes in front of each layer's name show whether that layer is the current layer, whether it is hidden and whether it is frozen. In this example, the **SYMBOL DEFINITION** layer is checked indicating it is the current layer. The boxes in front of the **GAME MASTER ONLY** layer have an **H** and an **F** indicating that the layer is both **Hidden** and **Frozen**. Try hiding the **MINERALS/MOUNTAINS** layer by clicking in the middle box for this layer, and click **Ok**. Then go back into the Select Layers dialog and unhide it again.

Hidden Sheets

Hiding and revealing sheets work very much like hiding and revealing layers. Click **Sheets and Effects** or the **Sheets** indicator S: Common Sheet to open the **Drawing Sheets** dialog. In this example, the check indicates **COMMON** is currently selected, and the **H** in front of the **SYMBOLS** sheet indicates it is hidden from view. To reveal the **SYMBOLS** sheet, click the **H** to clear it. Make sure **Redraw on OK** is checked, and then click **Ok**.
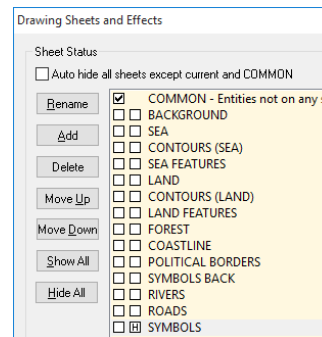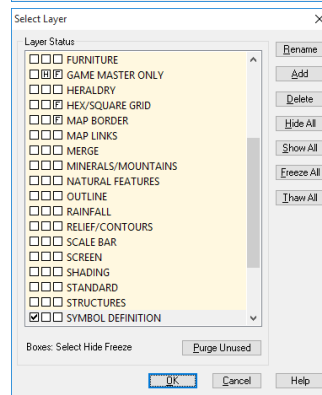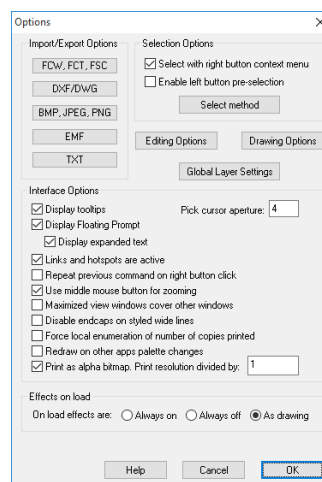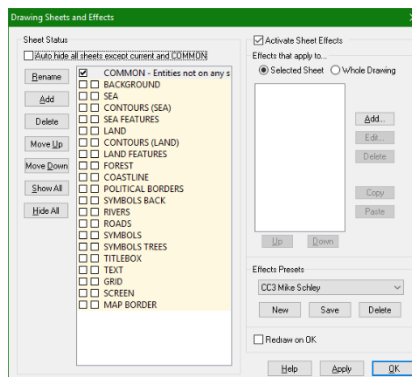
Slow Down

Effects are very resource intensive, and even if you have a very powerful computer, you may find that editing a map with effects on is slow. While CC3+ is more efficient compared to CC3, if you experience any slowness, you should only turn them on when tuning effects or print/export the final map.

Effects on Load

This option is available for individual maps in the Display Speed Settings dialog.

Hidden from View

Hiding sheets and layers is used for various purposes. It might be used to hide secret doors and traps from a dungeon map when showing it to the players, or the drawing might contain place names in several languages. In this case, all but the desired language should be hidden.
Hidden sheets and layers will not print or export.

Frozen

Frozen layers are visible, but entities on these layers can neither be selected nor manipulated.

Changing Views

Locate the **Zoom** commands in the upper right corner. With these tools, you can change the focus of the current map. Let's do a short exercise to demonstrate how these commands work.

3. Click **Zoom Window** 🔍.

    The **Floating Prompt** reads **1st corner of zoom window:** and the pointer changes to crosshairs.

4. Click at the bottom left of the forest called Huntswood. The prompt reads **Opposite corner of zoom window:**. Now, when you move the mouse you see a box shrink and grow. This is CC3+ showing you the window to which it will zoom.

5. Put the opposite corner of the window at the top right of the forest then click again.

    CC3+ zooms in to the forest.

    You now have a closer view of Huntswood. You can repeat the command to continue to **Zoom Window** and focus tightly on any entity or area of the drawing.

6. Click **Zoom Extents** 🔍 to see the whole drawing again.

    Zoom Window and **Zoom Extents** will cover most of the navigation you'll require, but there are other zoom buttons if you need them.

Zoom In 🔍 and **Zoom Out** 🔍 will change the magnification of the **View Window** by 2x respectively. **Redraw** 🔄 will refresh the drawing. **Zoom Last** 🔍 will return the **View Window** to the previous zoomed view.

Find Text in the Drawing

CC3+ gives us the ability to zoom to text in a drawing. For example, let's find Knight's Landing in the drawing.

Zoom to Text

7. Right click on any of the **Zoom** buttons, then select **Zoom to Text**.

8. Type **Knight**, then click **OK**.

    The view is now zoomed in on the Knight's Landing text.
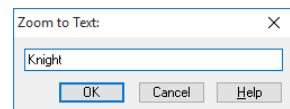
Zoom to All Text

Zoom to all text gives us a list of all the text that is visible in the current drawing.

9. Right click on any of the **Zoom** buttons, then select **Zoom to all text**.

    From the list of text, select one and CC3+ will zoom the view to that text in the drawing.

Click

Click and release. Don't click and hold the mouse button to drag the cursor. This allows you a far greater precision when using the mouse.

Refresh

When you use editing commands, CC3+ erases affected entities by drawing over them in the background color before drawing the changed versions of the entities. This can leave apparent holes in other entities and in the grid. Redraw recalculates your drawing from the database, then redraws the screen, eliminating those holes.

Knight's Landing Text

We could also have typed *Landing* or **Landing* or *Knight** or *th's La*. The text search will look for the text sample in all visible layers of the drawing.

Viewing and Navigating Review

- Use the **File manager** to preview and select a drawing to open.

- Turn off sheet effects to speed up redraws while the drawing is in progress. Turn them on for the final presentation.

- Hidden sheets and layers are not visible and do not print.

- Zoom commands are used to move around the drawing.

- **Zoom to Text** and **Zoom to all text** can be used to find text in the drawing.

The Known Oceans

This drawing was originally created in **CC2 Pro** by **Allyn Bowker**. It was updated in **CC3**. The Known Oceans uses techniques described **in Issue 06-Parchment Backgrounds** in **The Cartographer's Annual 2007**.

This style is provided in the Cartographers Annual Volume 1 (http://www.profantasy.com/annual/2007/)

OUR FIRST MAP

Now that we've looked at the interface, let's begin our first map. Our maps are created from templates. These templates, which are FCT files, give us a foundation of tools on which to create our drawings.

Before we start mapping, let us stop and think for just a minute. Drawing a map is not something we should dive headlong into. Instead, we should have a plan. We need to know what we want to draw, and some details about it, like the size of the area. Let me tell you a bit about the map I plan to draw here now.

> *The map will detail the King's Coast. This is a stretch of coastline near Snowport, the capital of Windclaw, the largest of the Windclaw Isles, situated in the Maldaric Ocean, located on a world called Virana. This map is intended to be used for a roleplaying game, and the flavor of the setting is a low-magic medieval feel. The area is lightly populated. The island of Windclaw is about the same size as a medium-sized European country, so the part we will be mapping is just a small piece of the coastline. The island itself is dominated by large forests and hills, so I want that to influence our map as well.*

So, the text above should provide some ideas for what we want. I could easily have gone into more details, and I might even have drawn a sketch on paper, but I am not going to do that. Instead, let us get mapping, and I'll get back to details from the description as they become relevant.

For this map, we will be exploring how to create a basic map using the tools provided, but we will also dig a little bit deeper, do some tweaking, and demonstrate how we don't always have to use everything exactly as provided.

If you have add-ons installed, begin by clicking **Map Menu** to set the interface to the **Overland** menus.

Defining the Map

1. Click **New** .
   The New Drawing Wizard opens.
   Select **Overland Maps** then click the radio button to select **Decide Settings Myself**. Click **Next>**.

2. Select **CC3 Mike Schley Overland**. Click **Next>**.
   The **New Drawing Wizard** presents us with options.
   Since our map will depict a small stretch of coastline, we'll stick with a relatively small map. Change the dimensions to **100 Width** and **80 Height**. For overland maps, these dimensions are measured in miles. So, even if this is a small map as far as maps go, do keep in mind that 100 miles is still a considerable distance.

3. Let's also add a compass rose. Click **Bottom Right**. From the **Select symbol** dialog, click to select a compass rose. Click **OK**.
   As you can see from the list of symbols, we could also have placed a map title and a scale bar at this point. However, I want to see more of the map complete before I place these components.
   Note that the Map Title and Copyright notice fields in the wizard is only used if you actually place the Map Title or copyright symbol in the map from the Select symbol dialog. Otherwise, they are ignored.

4. We could click **Finish** now and our new map would be created. Instead, let's click **Next>** just to continue exploring the wizard. From this page of the **New Drawing**
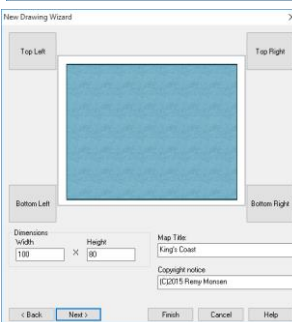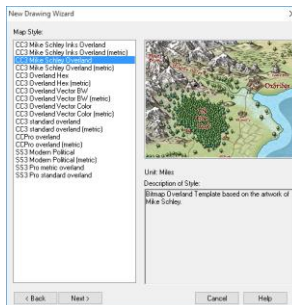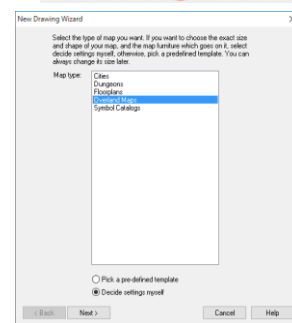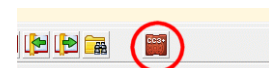
Wizard, we can choose from a selection of backgrounds if we don't want the default background. We can also apply a grid with the **Grid Overlay** option if one was desired. For our exercise, we won't apply a grid and we will accept the water background.

5. Click **Next**>. This last screen of the wizard allows us to enable multiple levels. This isn't normally used for overland maps, but it is helpful for floorplan or dungeon maps, where you want many maps of the same size. If you do enable multiple levels, **CC3+** will generate one separate map file for each floor/level in the drawing. Hyperlinks will also be added to the maps, allowing you to navigate between them with the click of a mouse. None of this is helpful to us now, so just leave the option unchecked.

6. Click **Finish**.

7. In the **Save your new map** dialog, enter a name for your new map, then click **Save**.

CC3+ will open your new map in the view window, ready to begin drawing our map. Our drawing at this step can be viewed in **Tutorials/UserManual /First Map-01.FCW**.

Drawing a Map

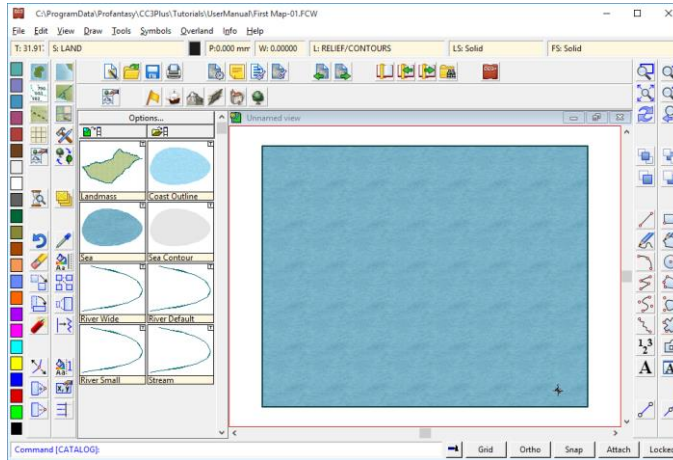Let's start actually drawing the map. The map will be a simple map, based on our explanatory text earlier. You have already seen the finished result in the Viewing and Navigating chapter. Our first question is what to draw in what order?

Entities in a **CC3+** map are displayed in the order they are added, with more recent entities laying over previous entities on their respective sheets. It is possible to reorder the entities after they've been added, though it is worth trying to draw them in the right order in the first place. By using the drawing tools which utilize sheets, however, it is easy to go back and add things without having to reorder the entire drawing

The general rule is to add all the solid and bitmap fills first, working from lowest elevation to highest. These entities form the foundation for our drawing. Once the landmasses are in, we can add mountains, rivers, vegetation, roads, structures and finally text.

Landmasses

8. Click **Default Landmass** . Notice that the settings on the **Status bar** have changed.
   The **Command Prompt** reads **Fractal polygon: First point (E – Edit):**. CC3+ is ready for the first point of the landmass.

9. Click a starting point for our landmass.
   In this example, we clicked our first landmass point at A. Note that this point is slightly outside the map border. This is intentional, as all drawing tools stop at the map border. Thus, by clicking right outside, we ensure that there is no gab between the map border and the start of our landmass.
   The Command Prompt reads **Next point: (DEL – back, Space – Randomize, L/R Arrows – Depth, U/D arrows – strength, T - Trace):**. As the cursor is moved around in the **View**
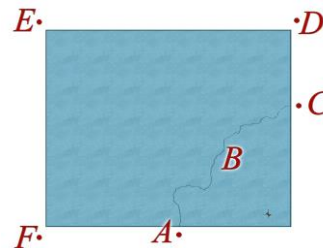
Compass Rose

You can select any of the compass roses that you like. The example we'll be following in this exercise uses **Compass Rose 2 n**. There is no functional difference between the compass roses. The choice is simply artistic preference.

Choose

Note that any selections we make in the New Drawing Wizard can be changed later. If we decide later that we don't want the water background or if we decide later that we want a grid, we can make these edits in our drawing. No selections we make in the New Drawing Wizard are set in stone.

Save

CC3+ defaults to the last directory used. Currently, this is the CC3+ data directory. You may want to save your map somewhere else, like your My Documents folder.
Note that in some cases, CC3+ may suggest the program installation directory, you should never save your maps here, instead browse to an appropriate location.

Entities

Entity is a term you'll see a lot when talking about CC3+ drawings. An entity is anything that is in or added to the drawing. Symbols, text, landmass shapes, and paths are a few examples of entities. Entities in the drawing can also be invisible such as Action Hotspots, Control Points and External References. These invisible entities are more advanced topics and will be explained in later chapters.

Window we can see a segment of fractal coastline stretching out from our initial point. Watch the shape of the coastline trailing from the cursor. Edit it as desired using the key press options, then click at points along the line marked B as necessary to set the coastline. Let the automatic fractalization help you, don't try to manually set every minor point long B. Once the coastline is set, extend the cursor off the drawing to click at **C**. Click at **D**, **E** and then finally at **F**. Now right click to complete the landmass.

10. The **Command Prompt** reads **Fractal polygon: First point (E – Edit):**. CC3+ is ready to draw another landmass. If we left click in the drawing, CC3+ will begin drawing another landmass. We don't need another landmass in this map, so right click to end the command.
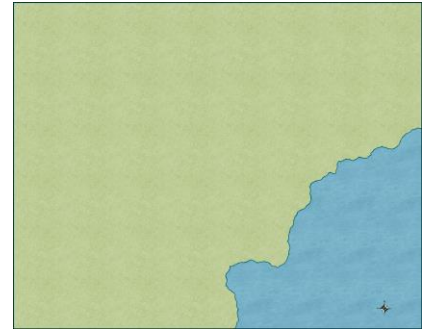
The **Command Prompt** reads **Command [DRAWTOOLSP]:**. CC3+ is waiting for your next action. The current form of the map can be found at **Tutorials/UserManual/First Map-02.FCW.**

Terrain Features

Now we have a foundation on which to build the rest of our map. We'll start by adding some hills and an area of grasslands to our map.

11. Right click **Default Terrain** 🗺.

From the selection of **Terrain** drawing tools, select **Terrain Default, Hills Back**.

Terrain Default, Hills Back

The prompt reads **Smooth Polygon: First point):**. Use this tool to add a background for our hills in the top left corner. Note that this is a smooth tool, as opposed to the fractal tool you used to draw the coastline. While a fractal tool adds additional detail by adding intermediate points in between your points, a smooth tool will use your points as a base for a smooth curve. This means that the final result will not go through the exact placements of your points, these will only guide the curve. Just as with the fractal tool, the tool will not progress beyond the map border, so use this to your advantage to make sure the tool fills in the corner properly.

12. Click **Vegetation** 🌳.

The symbol catalog window changes to show symbols and drawing tools related to vegetation. Find and click the **Grassland** tool. Do note that we could also have found this tool by right clicking **Default Terrain** 🗺 as we did previously.

Grassland

The prompt reads **Smooth Polygon: First point):**

For the grassland, we are going to add a swath to the upper right corner of the map, but I want to add another requirement, I want it to follow the coastline. Trying to do this manually is an exercise in frustration at best, as this is a smooth tool, and the coastline is fractalized. But we can accomplish this using an advanced feature of the drawing tool – Tracing.

Click at point A to place the first point. Then place a few points along the line B to create a smooth curve similar to the illustration. As you approach point C, look at the prompt. It currently reads **Next Point (DEL – back, T – Trace):**. The text in parenthesizes are options we can invoke. In this case, we wish to start a trace, so hit the T key on your keyboard. The prompt immediately changes to **Entity to trace:**. Now, click on the coastline near D to select it. This will tell the tool that we want to trace along the coastline. If you selected the coastline properly, the prompt should change to **Starting point of portion:**. Click on the coastline near C to start the trace here.

Solid and Bitmap Fills

Contours, landmasses, lakes and colored regions are made of solid or bitmap fills.

Settings

The landmass will go on the LAND sheet, on the COAST/SEA layer and the fill style will be land dark green Bitmap. These are the default settings for this particular drawing tool. These default settings are determined by the Map Style we picked in the New Drawing Wizard.

Starting Point

Notice the dots in the illustration indicating where to click. These are not precise points, but are merely to show that we are to click outside the map border. The drawing tools automatically restrict to the border of the template so when you reach the edge of the map, click outside the frame to 'set' the boundary for that side of the landmass shape.
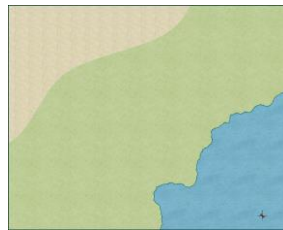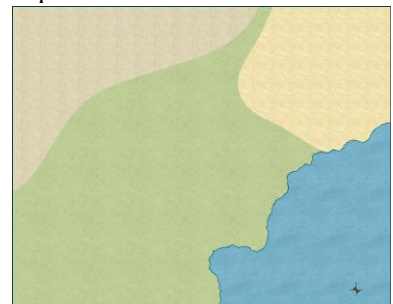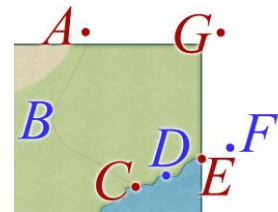
Fractal Coastline

You can use the key press options shown in the prompt to vary the fractal. For example, press Space to rerandomize the segment or DEL to go back a segment.

Off the Drawing

The drawing tools automatically restrict to the border of the template so when you reach the edge of the map, click outside the frame to 'set' the boundary for that side of the landmass shape.

Complete the Landmass

You don't have to close the polygon by returning to A. CC3+ will close it for you.

Sidebar continue on next page...

The prompt now changes to **Ending point of portion**, and if you move your mouse, you'll see that the preview line starts following the coastline. Move your cursor just off the map at point E, where the coastline ends, and click. This ends the tracing, and let us go back to drawing normally. Now, simply finish up the grasslands by clicking at F, then at G before right-clicking to end the command and complete our polygon. Note that if you zoom real close in to the coastline, you can see some minor imperfections. This is caused by the fact that it is impossible for a smooth tool to match a fractal line exactly, but don't worry, these imperfections will turn invisible when we enable effects in the map.

13. Click **Save** 💾.

To continue along using our drawing, open **Tutorials/UserManual/First Map-03.FCW**.

Adding Symbols

Symbols are a special type of entity used for map features such as trees, cities and mountains. They are the little graphic entities that you see in the example maps.

The symbol catalogs included in CC3 have many features which include:

- Shaded Varicolor (SVC) symbols which, when placed, are shaded in the color that is currently displayed on the **Status bar**. SVC symbols are indicated by a color box in the corner of the symbol's window.

- Random symbol from collection. Some symbols are picked randomly from a collection of similar symbols, like a collection of different mountains. This allows you to easily have variation in your map without having to manually pick and place different symbol. A new symbol will be automatically selected from the collection for each placement. Such symbols are indicated by the letter R in the corner.

- Symbol is part of a collection. Symbols with a + in the top left corner are the first in a collection of related symbols. Click the + to expand the collection and see all the symbols it contains.

To insert a symbol from the catalog, click on the desired symbol in the **Symbol Catalog Window**. A dynamic cursor of the symbol appears, allowing you to see the position of the symbol as you place it.

While holding a symbol on the cursor, the prompt reads: **Place symbol (CTRL – scale, CTRL+SHIFT – rotate, TAB – next,) [options]:**

The prompt is telling you that you can also:

- press and hold ⎄CTRL⎄ while moving the mouse to dynamically scale the symbol on the cursor

- press and hold ⎄CTRL⎄ and ⎄SHIFT⎄ together while moving the mouse to dynamically rotate the symbol on the cursor

- press ⎄TAB⎄ to go to the next symbol in the collection if the symbol chosen is in a collection.

- right click or press ⎄ENTER⎄ to accept the default, which in this case is the **Options** dialog box.

Click in the drawing to place that symbol.

Symbol Scale

You can represent height using contours, symbols or a combination of both. In our drawing, we added a terrain contour for our hills, but we'll also add hill symbols.

14. Click **Minerals/ Mountains** 🏔.

CC3+ changes the current settings in readiness for drawing hills & mountains. Mountain symbols and drawing tools load into the **Symbol Catalog Window**. To get a wider view of the symbols in the current catalog, right click in the **Symbol Catalog Window** to expand the window. Pick a symbol from the catalog or right click again to collapse the window.
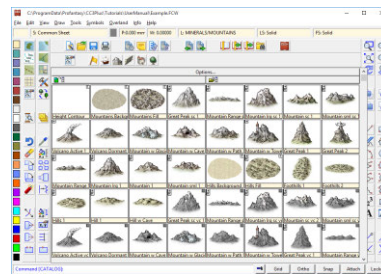
Selection

If the drawing tool window only shows a list of names and no preview images, you can check the **Display Sample** checkbox.

Drawing Tools

There are two ways main to access drawing tools in CC3+. Either by clicking on one of the drawing tool buttons to the left, like we just did, or by finding them in the symbol catalog window. For example, if you click one of the buttons on the Symbol Toolbar, like **Minerals/ Mountains** 🏔, you'll find the Hills Background here as well, right next to the hill symbols in the Symbol Catalog Window.

Hills

There are different ways to show elevation, like hills and mountains in our maps. We can use contours like those we'll draw with the drawing tools, we can use hill and mountain symbols, or we can use a combination of both. For this exercise, we'll use a combination of both.

Near D

The point you select the entity to be traced is important, as the trace will always pass through this point. If you select a point outside the desired section to trace, you'll find that the trace goes the "wrong way" around the entity.

15. Select the Hills 1 symbol from the symbol catalog window (you may need to scroll down to find it). You'll find that it attaches itself to your cursor. Start placing a few of these in the upper left corner of the map, don't worry if small parts of the symbol extends beyond the map border. You should notice that the symbol on your cursor changes between each placement, because this is a random collection of symbols, as discussed above. After placing a few symbols, right click inside the drawing area. This will bring up the **Symbol Parameters** dialog. Click the **Finished** button to indicate that you are done placing symbols for now.
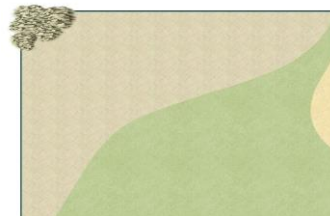
Let us talk for a bit about the symbols we just placed, more specifically, about the size, or scale, of the symbols. It may not be immediately obvious, but for the map I am planning to do here, I believe these symbols are far too small. If you open up the completed example drawing from earlier, you can see that the hills symbols are much larger there.

The reason for the larger symbols in the completed map is that I felt that size fit better with the map I envisioned when I started designing it. So, I changed the scale of the symbols.

When creating a map, there is a rule of thumb that says the symbol scale should be the map width divided by 1000. Our map is 100 wide, so 100/1000 is 0.1, which happens to the current scale of our hills. For the mathematically inclined of you, you may already have figured out that using this guideline means that there will be space for exactly the same amount of symbols on a large 10000x10000 continental map as a small 50x40 local map. And yes, that is correct. The reasoning behind this is that a map is intended to be readable. If you make symbols too small, they are difficult to make out, and too many symbols often ends up cluttering the map. The idea here is to know what details to represent, and how to represent them. First of all is level of detail. If you look at a real world map of the entire world, it does not show every minute detail of every place on earth. Only the big features are represented here. You may see a mountain range represented, but not each individual peak. And this should also hold true with CC3+ maps. Yes, you can use tiny symbols and thus represent every individual mountain in the range. And with CC3+'s zoom feature, the mountain range will look very nice and detailed when you zoom in to it, but if you zoom out and try to look at the entire map, it is going to look messy. This is why we use larger symbols on a larger map. We don't use a single symbol for each individual mountain in the mountain range, instead we use a couple of larger mountain symbols symbolizing the range. The exact details of the mountain range are better left to a more local map focused on that mountain range, and not in the world map.

Now, all of the above is a guideline. A sensible one, but no absolute rule. And it is here that we start to make the map truly ours. Instead of accepting the defaults, we are going to change things around a bit.

Let us erase the current hill symbols and place some larger ones. We could resize the ones already there, but that is more work.

16. Click **Erase** 🖊️. Now, using the pick cursor, click on the edge of each of the hill symbols. As you click on them, they should get selected, shown by a magenta outline. If you miss the edge when clicking, you will start a selection window instead. If this happens, just move your mouse trying to capture as many hill symbols as possible within the selection rectangle and then click again; everything with an edge inside that rectangle will be selected, the rectangle doesn't need to encompass the entirety of the symbol. Be careful not to select the map border.
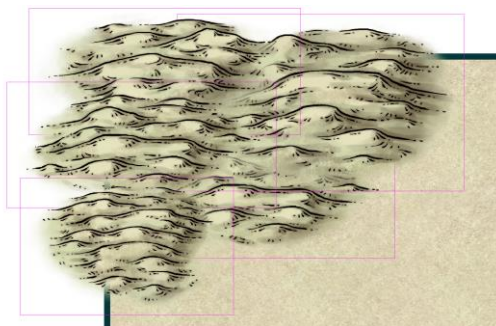
Once you have selected the hills, right click within the drawing area and select **Do It** from the menu. Once deleted, the hills will leave behind some white areas. To allow the program to work smother and be more responsive, areas beneath moved/deleted entities won't be automatically redrawn. The white spots will disappear by themselves the next time you zoom or scroll the map, or if you issue a map **Redraw** 🔁.

17. Click **Drawing Properties** 🖼️. In the **Drawing Presets** dialog that opens, change the value for scale from 0.10000 to 0.25. Doing so will set the default scale to use for new symbols. A scale of 0.25 means that that any dimension of the symbol will be one-quarter of its normal size.

18. Click the **Hills 1** symbol again. You may notice that the symbol attached to the cursor is still the same size as previously. This is because we changed the default scale, but not the current scale. The current scale doesn't get reset to the default for each symbol, since you sometimes wish to work using a different scale temporarily. Therefore, we need to tell it to reset the current scale to the default.

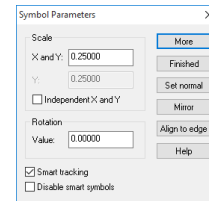You do this by right-clicking in the drawing (with a symbol on your cursor), to bring up the **Symbol Parameters**. No click the **Set Normal** button, and note that the scale input fields change to our default scale. Then click **More** to go back to the map and continue placing symbols. You can read more about the Symbol Parameters dialog on page 79.

19. Now, it's time to place some hills.

When adding hills, work from top to bottom so that each hill covers the base of the one behind and the shadows lay correctly. Don't be afraid to overlap the symbols, these hills blend together quite nicely, and don't worry if they extend a little outside the map border either.

Use this technique to add hills to the drawing. While placing symbols, use **Zoom Window** 🔍, **Zoom Extents** 🔍, and **Zoom Last** 🔍 to get the best view. I left the little gap you can see in my image because I am going to have a river come through there.
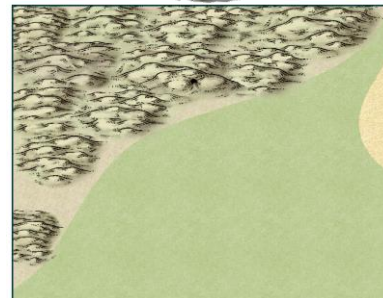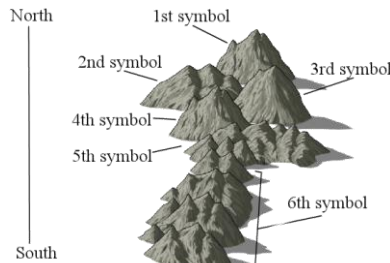
To continue along using our drawing, open **Tutorials/UserManual/First Map-04.FCW**.

Rivers

Now that highlands have been added, we can add rivers.

20. Click **Default River** 🏞️.

The command prompt reads **Smooth Path: First point):**. Add rivers to the drawing where you think they should be. Click points to create a meandering river, guided by the high-ground, then right click to end the river.

The prompt reads **Smooth Path: First point):**. CC3+ is ready to draw more rivers. Right click to end the River tool now, or continue to add any tributaries, distributaries or deltas. As with the mountains and hills, use **Zoom Window** 🔍, **Zoom Extents** 🔍, and **Zoom Last** 🔍 to get the best view to place the rivers.
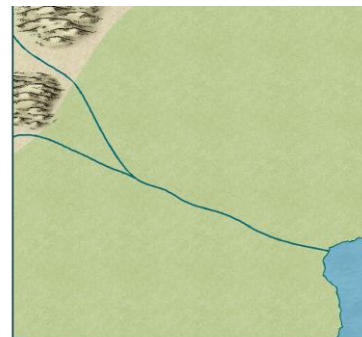
To continue along using our drawing, open **Tutorials/UserManual/First Map-05.FCW**.

Selection Window

A selection window is a way to select multiple entities, or difficult to select entities. When the prompt asks you to select entities, you can always start a selection window by clicking on a spot in the map that is not on the edge of any entity. This starts a selection window, and you'll notice that a rectangle forms between the first click and your mouse cursor. Click again to finish the selection window, and any entities that have at least part of their edge inside the area defined by the selection window will be selected. Be careful when using a selection window, you may end up selecting more than you wanted.

Adding Hills

Don't use too many symbols. The most beautiful maps are not completely covered with symbols. If you combine contours and symbols, don't completely fill the contoured areas. Leave a gap at the edge so the contour color shows through.

River Tool

Right click Default River to pull up a selection a river drawing tools in various widths.

End the River

Note that when you right click to end the river, it will end at the last point you placed using left click, not where you right clicked. This is because a river is a path, as opposed to the closed polygons you have been drawing earlier, so no additional lines will be added automatically when you end the command.

Vegetation

If you remember the map description from earlier, I said that this area was thinly populated. That usually means that they haven't made any large changes to the area, such as deforestation. So, in this case, it makes sense to start with the forests.

21. Click **Vegetation** 🌳. This loads the vegetation catalog into the symbol catalog window, containing both vegetation symbols and drawing tools. We'll start by concentrating on the forest.

22. Find the Mixed Forest Tool in the catalog window, and use it to place some forests in the map. This drawing tool is used exactly the same way as other drawing tools you are used to, but it differs in one regard. Once you finish drawing the forest area, it will fill it with actual tree symbols instead of a bitmap fill, like for example the grasslands we drew earlier.

23. After placing the major forests, use the individual tree symbols to place a scattering of trees around the map. These represents lighter forested areas on the map. Do remember that this map does depict a reasonably sized area, so each individual tree symbol represents a small forest in itself. When adding trees, we use a technique similar to the one used when adding mountains and hills. Work from top to bottom and don't overdo it.
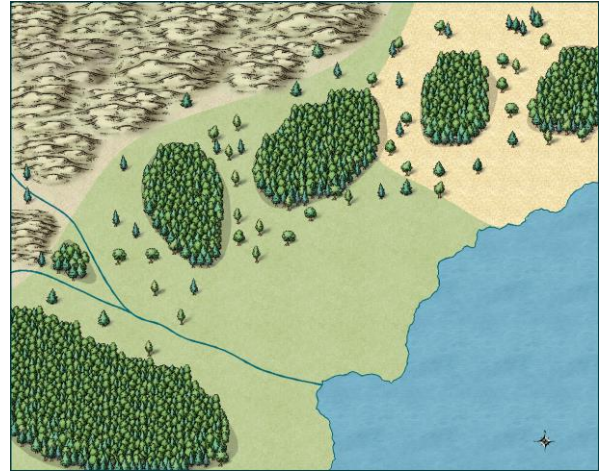
To continue along using our drawing, open **Tutorials/UserManual/First Map-06.FCW**.

## Structures and Roads

Now that the main terrain features are in place, it is time to add a touch of civilization to our map.

24. Click **Structures** 🏠. This catalog contains a variety of symbols for villages, towns and cities as well as bridges, ruins, monoliths and other man-made structures. Add a sprinkling of settlements in different sizes to the map.

I find it useful to start with the largest cities, and work my way downward. You'll note that I didn't use the city symbol at all in my map. Even though Snowport is the capital of the isles, and certainly the biggest settlement around, it is too small to be called a city in this world. Don't be too bound by the symbol names though, it is the symbols themselves which are visible in the map, not their names.

Don't be afraid to move or erase some of the trees we placed earlier to make better room for the settlements and roads.

25. Right click **Default Terrain** and select the **Terrain Default, Farmland** tool. Use this tool to add some farmland around the main city.

26. Select the **Road Major** tool from the symbol catalog, and use it to draw a main road between two major settlements. Make it go through any smaller settlements on the way. You'll notice that this tool draws a solid line.

27. Select the **Road Minor** tool from the symbol catalog. Use this to connect the rest of the settlements to each other. The roads drawn by this tool are represented as dashed lines.

To continue along using our drawing, open **Tutorials/UserManual/First Map-07.FCW**.

Final Tweaks

Except for text labels, which we will cover in the next chapter, we now have a pretty complete map. All major aspects are in place, and it looks quite ok. But I think we can do better. Let us add some more minor details to the map, and do some tweaks of the existing visuals. Note that this final section is slightly more difficult than the preceding part of the tutorial.

Shallow Water

First of all, let us start by adding some shallow water near land, this will serve make the sea a bit more varied.

28. Click **Coast/Sea** . Select the Coast Outline tool from the catalog window, and use it to draw shallow water. Draw this the exact same way we drew our landmass back on page 25, but make it extend a bit from the landmass along the coast.

You'll notice when you finish drawing it that it seems to cover the landmass. However, once you change the view or click the **Redraw** button it will fall in place behind the landmass.

Compass Rose and Scale bar

Our compass rose looks a little bit small, and we have yet to add a scale bar. The simplest option right now would be to just delete the existing compass rose and then add a new one, but let us try rescaling it, since this is a technique you definitely want to use in other cases.

29. Click **Scale** , then select the compass rose by clicking one of its edges. It should be outlined in magenta to indicate that it has been selected, and the prompt should read **Select entities (1 picked):**. Right click inside the drawing area, and select **Do It** from the popup-menu.

The prompt now asks for **Scale origin:**. Click in the middle of the compass rose to set a reasonable position. You can now move the mouse to scale the symbol. Move it towards the top of the drawing, and the symbol will get larger, move it downwards, and it will get smaller. The symbol itself will be represented as a square outline. You can see the current scale value in the top left corner of CC3+, on a red background. A value larger than one means you are making the symbol bigger, while a value less than one means you are shrinking the symbol.

You can make the compass rose any size you want, but I opted for a scale of approximately 2.5. Once you are happy with the scale, simply click the left button to finish scaling.

30. Time to adjust the position of the compass rose. Click **Move, Scale, Rotate** and select the compass rose as before, finishing up with a right click and **Do It**.

The prompt asks for Move from point:. Simply click in the middle of the rose to set this point. You can now move the symbol around with your mouse, and click to place it in the desired location. I like to put it quite close to the bottom corner of the map, with equal distance

Approximately

When scaling by moving your mouse, it is easy to find a size that looks good, but it is more difficult to get something to an exact size. If you ever need to be exact, you can actually type in the new scale on the command line instead of moving the mouse. So in our example, to make the symbol exactly 2.5 times larger, you start the command the exact same way, but when the time comes to move the mouse to define the new scale, simply let the mouse be and type 2.5 on your keyboard, then hit enter.

There is also a separate non-visual scale command which is designed for this. In general, if you see the keyword non-visual in front of a command, then that is a command that is designed for typing in data instead of using your mouse.

from the symbol to the bottom and right borders respectively.

31. So for the scale bar. Click the **Symbols in Drawing** button. You should find a couple of scale bars near the top. I've used **Scalebar 1 n** for my map.

Before placing the scale bar, it is vital that the symbol scale is correct. The scale bar is supposed to show the scale of the map, so it is important that the scale of the scale bar itself is correct. With the scale bar selected from the catalog window and showing at our cursor, right click inside the drawing window to bring up the **Symbol Parameters** dialog. Click **Set normal** to ensure scale and rotation is properly set, then click **More** to go back to placing it. Place the scale bar near the bottom, to the left of your compass rose.

If you noticed the scale values in the Symbol Parameters dialog, you'll remember that they were set to 0.25, the same as our default scale from earlier. The scale bars we used are all 100 miles long, but since we use a scale of 0.25, ours is now 25 miles long. We need to label it as such so viewers of the map can understand the scale. Normally, I would do this immediately, but we'll just remember it for now, since we talk about text in the next chapter.

Decorations and Interesting Places

Unless you are going for a realistic modern-day map, most maps can benefit from some decorations. And if it is a fantasy map, you will probably wish to add some interesting location to pique the interests of players/readers.

For my map, I've added quite a few such symbols, such as a hill with a cave, a ruined tower, an obelisk, a burial mound, fish, windmills, fruit trees, horses, cows, waves, a ship and various sea hazards. These symbols both serve as decoration, and illustrate what you can find in the area. For example, on my map, the horse means that the immediate area has a lot of horse farming.

32. Pick and place interesting decorative symbols from the **Borders/Political** , **Coast/Sea** , **Minerals/ Mountains** , **Structures** and **Vegetation** catalogs.

To continue along using our drawing, open **Tutorials/UserManual/First Map-09.FCW**.

Roads

I am not 100% pleased by how the dashes for the minor roads turned out. These dashes may work perfectly fine for a map in a different scale, but I want to tweak their appearance by switching to a different line style. Fortunately, this is simple.

33. Click **Change Properties** . The prompt now asks you to select entities. Select at least one of the minor roads by clicking on it with the pick cursor. Be careful not to select anything else at the same time. Once you have one or more roads selected, right click and select **Do It**. The Change Properties dialog appears.

34. Change the line style in the box to ecw-3. This is a different kind of dash. You'll see that a check mark appeared in the checkbox to the left. This indicates that the selected Line style value will be applied to the selected entities.

35. Click OK. You should now see that the selected roads switch to a different line style. You may need to do a **Redraw** to see the change properly.

Another issue you may notice with the roads is that they appear on top of the various symbols. When I draw map, I like to just draw a long road passing straight through settlements, and this does not look good. If you remember the introduction to sheets earlier (page 13), drawing objects are layered on top of each other based on the order of the sheets. Right now, the roads appear on top of the symbols because the roads are drawn after the symbols, so let us change this.

36. Click **Sheets and Effects** 🗗.

37. In the Drawing Sheets and Effects dialog, find the ROADS sheet and select it. Now press Move Up twice. This should move it up to just above the SYMBOLS sheet. This means that the roads will be drawn first, and then symbols, such as the settlement symbols will be drawn next, on top of the roads. Place a checkmark in the Redraw on OK box, then hit OK. The roads should now be hidden beneath the settlements.

Fill scale

The final change I want to do with the map is to change the scale of some of the fill styles. Right now, I think the scale is a bit small, so let us increase it. For this step, we are going to change the properties of some of the fill styles themselves. But note that in CC3+, all fill styles are defined on a per-map basis, which means that our changes here will not affect other maps, past or future.

38. Click the **Fill Style Indicator** FS: Solid in the top right corner of the user interface. This will bring up the **Fill Style Properties** dialog.

39. Click the **Bitmap Files** tab. This tab contains all fill styles based on raster images.

40. Select the **Grassland_MS** fill style from the dropdown.

41. If you look near the bottom of the dialog, you'll see that this fill style has a scaled width and height of 5 each. Change these values to 50 instead, then click OK. You'll notice that the texture in the grasslands is no much larger, providing much more detail.

42. Use the process above to set the scale values for Farmland_MS to 12, Hills Background_MS and Sea_MS to 50, and Ocean_MS and Land_MS to 125.
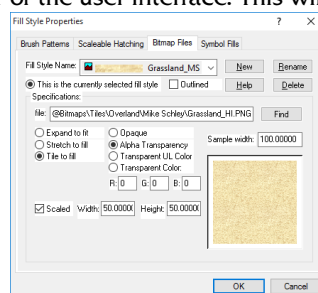
Stuff Outside the Map Border

If you look at my in-progress drawings, you'll notice that I have a small part of a hill visible outside the map border. It is not often this happens, but sometimes it does, so let us examine this a bit.

First of all, why does it happen at all? Why can I put anything outside the map border? The reason for this is that the drawing canvas in CC3+ isn't really limited, or at least not any limits you'll experience during normal use. So the map border doesn't really signify the edge of your drawing area, it only signifies the edge of your intended map size. Now, drawing tools do usually respect the map border, you might remember this from when you drew the landmass. These tools are specifically designed to do just that because it makes drawing easier, but there is no way to stop a symbol from being partly outside the map border, since this is a single rigid entity that can't be deformed to follow the border.

Now, to allow people to place a symbol next to the map border so only half the symbol is visible in the map, the various **CC3+** templates "cheats". They have a white polygon right outside the map border (This is called a Screen). This polygon is placed on the last sheet in the drawing order, basically hiding everything it covers. What you can see in my map is that the hill actually extends beyond the border of this white polygon. It is partly covered by it, but some sticks out past it.

The most elegant way to fix this is to edit this polygon a bit, but the procedure for that involves tools we haven't looked at yet. So, let us instead fix it using one of the basic tools of CC3+. Basic tools, as opposed to drawing tools doesn't set everything automatically, so we need to set the appropriate settings manually.

43. Click **Sheets and Effects** 🗗. Make sure **SCREEN** is the selected (checkmark) sheet in the list. Click **OK**.

Change the Scale

I am increasing the scale rather drastically on several of the fill styles here. You may fell that the details in them become too large for your taste. If so, feel free to use smaller values.

Also note that by using a relatively large scale like this, especially for the Ocean and Land fills, I limit how much you can zoom in before you see pixelation. If this is a concern, use a smaller value. Also remember, that if you find you want to actually use a map at a very high zoom level, you are probably better off making a separate, more detailed map for that area. That way, you can include all kinds of extra details.

Width and Height

Make sure to scale width and height by the same amount, otherwise the fill will look distorted.

44. Click the **Color Indicator** in the status bar. Choose the last color on the first row (white) in the **Select Color** dialog that pops up. Click **OK**.

45. If the **Line Width** W: 0.00000 indicator on the status bar is not **0**, click on it and set it to **0**.

46. Click the **Layer** L: STRUCTURES indicator on the status bar, and make sure **SCREEN** is the selected (checkbox) layer.

47. Click the **Fill Style** FS: Solid indicator on the status bar, and select **Solid** as the fill style from the **Brush Patterns** tab, and remove the checkmark in **Outlined** before clicking **OK**.

48. Click **Box** from the rightmost toolbar. This basic tool doesn't have any default properties, and will use the various values we just defined.

49. The prompt reads **1st corner:**. This basic tool lets you place a rectangle by defining two diagonally opposite corners. Place a rectangle that covers up that little piece of hill. Don't make it too big.

You'll find my final result (for now) in **Tutorials/UserManual/First Map-10.FCW**.

Effects

To see the fruits of our labors so far, let's take a sneak peek at our map with effects turned on. We don't need to be graphic artists to make great looking maps in CC3+. It is as easy as clicking a button.

50. Click **Sheets and Effects**.

Click to put a check in the **Activate Sheet Effects** box, then click **OK**.

Remove the Checkmark

Effects require additional processing power to show, and may slow down the program. If you have a powerful computer and don't overdo the effects use, you can probably work with effects on, but if you notice any slowdowns, it is recommended to turn them off for a smoother work experience. If you have previously worked with CC3 before using CC3+, you'll find that CC3+ is much more efficient with effects.

51. Click **Sheets and Effects**.

Click to remove the checkmark in the **Activate Sheet Effects** box, then click **OK**.

Adding Text

Text deserves a chapter all to itself, so we'll go to the next chapter to begin adding text to our drawing.

Our First Map Review

- Entities in a CC3+ map are displayed in the order they are added, with more recent entities laying over previous entities on their respective sheets.

- As a general rule, work from the lowest elevations to the highest elevations, working from the top of the drawing to the bottom.

- Drawing tools set the sheet and layer for most mapping entities which force proper drawing order.

- Shaded Varicolor (SVC) symbols are shaded in the color that is currently displayed on the **Status bar**.

- Don't use too many symbols. The most beautiful maps are not completely covered with symbols.

- Some of the drawing tools, such as the river tools, use **Attach**. **Attach** can be enabled or disabled in mid command. Right click **Attach** to change its attach mode.

- Zoom functions can be used in mid command to focus on a particular area of the drawing.

- Watch the **Command** Prompt. Options for using **Drawing Tools** and placing symbols are given in the **Command Prompt**.

The Lost Realm of Astirlerond

The Lost Realm of Astirlerond map was created in **CC3** by **Steve Townshend**.

This style is provided in the Cartographers Annual Volume 2 (http://www.profantasy.com/annual/2008/)

THE INS AND OUTS OF TEXT

Once completed, a map needs labels. Unless it is a highly specialized or very mysterious document, folks looking at it will need to have the features in the map identified. With a few tips and tricks to work with, you can add text to your map to both enhance its usefulness and its appearance.

Placing Text

Using either the drawing we just completed in Our First Map or opening a new drawing, let's explore placing text.

Text Properties

Height sets the height of a capital letter. The default text height is 0.2 units high. Angle sets the angle (any angle) at which text may be drawn. Spacing sets the baseline of new text entities. The default spacing of each new text entity is specified at 150% of its height below the last text. Stretch sets the proportion of the text entity. The default stretch is 1 unit. A value of 2 would produce text that is twice as wide as normal. Use New Metrics enables enhanced text handling. Text heights for TrueType® fonts will be more closely matched over a wider variety of typefaces. Justify sets text baseline justification. For Character style, select the checkboxes for the desired effects for the selected font.

1. Click **Text Properties** [A] .

    The **Text Properties** dialog opens.

    It is in this dialog that the text properties are set. Labels can be made using the fonts already available in the **Font** list, or fonts can be added to the drawing by clicking **More Fonts**.

    If you're following along with Our First Map from the previous chapter, set the text properties as follows:

-   **Height**: 0.88
    Height sets the height of a capital letter. The default text height is 0.2 units high.

-   **Angle**: 0
    Angle sets the angle at which the text will be drawn

-   **Spacing**: 120
    Spacing sets the baseline of new text entities. The default spacing of each new text entity is specified at 150% of its height below the last text.

-   **Stretch**: 1.15
    Stretch sets the proportion of the text entity. The default stretch is 1 unit. A value of 2 would produce text that is twice as wide as normal.

-   **Use New Metrics** enables enhanced text handling. Text heights for TrueType® fonts will be more closely matched over a wider variety of typefaces.

-   **Justify**: Top Left
    Justify sets text baseline justification. This will be further explored later in this chapter.

-   **Font**: Middle Ages .

-   For **Character style**, select the checkboxes for the desired effects for the selected font.

2. Once the desired text properties have been set, click **OK**.

More Fonts

The fonts aren't added to the drawing per se, but are made available in the Font list for use in the drawing. If the drawing is created using a non-Windows® standard font and the CC3+ file is viewed on a computer that does not have that font installed, the text will display in Arial.

3. Click **Text** **A** .

    The current sheet changes to **TEXT** and the Edit Text dialog opens.

4. Type in the text then click **OK**. For Our First Map, the example uses Snowport as the first label. The text is held on the cursor at its insertion point.

5. Click in the drawing where you wish the text to be placed. In our example drawing, we put the label at the city symbol.

6. Right click to finish inserting the Snowport text string. The text should disappear from the cursor.

Middle Ages

If Middle Ages isn't in the list of fonts already loaded, we need to add it. To load Middle Ages into the current drawing, click More Fonts, then select the System Tab. Scroll down to Middle Ages. Click to highlight Middle Ages, then click OK. Make sure Middle Ages is selected as the current font.
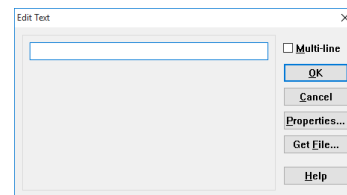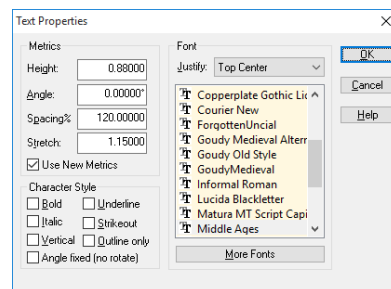
Text Glow

The default sheet effects in CC3+ provide for a soft glow around entities placed on the **TEXT** sheet, as well as a drop shadow. This glow provides a background to the text to help make it more legible and stand out from the entities under it. To turn on the sheet effects, click **Sheets and Effects**. Click to put a check in the box for **Activate Sheet Effects**, then click **OK**. Unless you experience a noticeable slowdown, you may wish to just keep effects on for the rest of the work.

Selecting Fonts

When selecting a font or fonts for your map, consider how they will be used, what the final presentation for the map will be, and at what resolution. Text that looks good in CC3+'s **View Window** might end up being dreadfully small or might be dreadfully big when exported to a raster image. That lovely, scrolling font might be all but illegible in the final output if it is too small. As a general rule of thumb, reserve the large, fancy font for large labels such as the map name and large, prominent features. Use medium size text for the intermediate features, and use a plain, highly readable font for the smallest labels on the map.

Taming Text

Now that we've explored the mechanics of placing text, let's take a moment to explore **Justification** (insertion point) and how it affects text position and appearance.

The insertion point of any text label is the point which is the 'anchor' of that label. Choosing the best anchor makes the text more easily read. In the example here, all four text labels–shown as their respective justification names–are anchored to the structure symbol, but of the four, one is clearly the most legible. With effects and masking tricks, any of the labels can be made useable, but starting with good text placement will make the drawing easier to read.

When exploring **Text Properties**, we find there are many options for justification, a few of which are shown here. In each line, the dot is the insertion point and the label is the name of that justification.

The question is, why are we so concerned about the insertion point? CC3+ is a CAD engine run in a Windows® environment. There are no pixels in the CC3+ drawing, but Windows® must render the drawing on the computer's monitor. We might pick the size and placement of the font, but when displayed on the screen or when exported to a raster image, the font is lurched to a size that Windows® can best render for that resolution. As a result of CC3+ working with TrueType® fonts in Windows®, the text label may grow or shrink a little and might overlap areas of the drawing not intended. Normally, this is not a problem since the amount of change is very small, but there may be times when it is necessary to your task that a text label stay confined within specific constraints.

Understanding how the text behaves and why it behaves that way allows us to tame it. To avoid this issue, one solution might be to use FNT or SHX Vector fonts. Another solution is to Explode the text on placement to make it an entity rather than text.
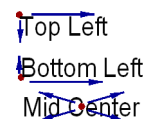
Back to the question already posed, why are we so concerned about the insertion point? The text will 'grow' out from the insertion point in the direction of the text. These examples show the direction that text will grow if Windows® lurches it in order to render the image at the selected

Edit Text

Put a check in the box for Multi-line if you wish the text label to be more then a single line. Text Properties is also available from the Edit Text dialog by clicking Properties.

Place Text

Zoom commands work within other commands. Once you have the text label on the cursor, you can click on the Zoom commands to zoom in or out or use **Zoom Window** before placing the text into the drawing.

Soft Glow

If you are not happy with the default glow, you'll learn to change it later in the manual when we take a closer look at sheet effects.

Export

If in doubt, do a test print or a test export to see if your font choice is legible in its size and placement and it properly conveys the significance of the feature it is identifying.

Best Render

This is not a behavior unique to CC3+. This is a behavior of all CAD programs trying to render Windows® fonts.

Vector Fonts

FNT Vector Fonts are font types used in the DOS version of Campaign Cartographer. SHX fonts are vector fonts compatible with AutoCAD®.
AutoCAD® is a registered trademark of AutoDesk, Inc.

resolution. Using a vector font will stop this behavior, but at the cost of appearances since vector fonts are typically plain and not nearly as diverse in selection as TrueType® fonts. For the large majority of your mapping needs, regular systems fonts will serve your purpose very nicely. Using vector fonts or exploding the text upon placement is an option, however, if it is important for your current drawing to have the text fit exactly where you placed it such as when placing the text in a tight fitting box and there is no margin for error.

Text Along a Curve

Rivers rarely run in a straight line. They wind and meander as they cross the terrain on their way downhill. When labeling a river on a map, it is very pleasing to the eye to have the text labels follow their curves. Let's do an exercise to explore **Text Along a Curve**.

7. On the **File** toolbar click **Open** 📂.

8. Browse to CC3+'s Tutorial\UserManual folder, then select Curve Text.FCW.

Here we have a segment of a river. Let's add a text label to it so the label follows the curves. To begin, we'll draw a path offset from the river to use as a guide line for the text.

9. Click **Smooth Path** 🖉. The cursor changes to crosshairs and the **Command Prompt** reads **1st point**.
Find a segment of the river that has a gentle curve and then draw a path a little offset.

10. Click to begin the path, then click to place each node of the path.

In this example, we have 4 nodes. Notice how the path bends between the first node and the last node guided by nodes 2 and 3.

11. Right click to end the path.

With the guide line in place, let's add our text.

12. From the **Draw** menu, select **Text along a curve**. The cursor changes to a pick cursor and the **Command Prompt** reads **Select Path**.

13. Click on the guide line path we just drew. The **Align Text to Curve** dialog opens.
Type the name of the river in the **Text** field. Put a radio button in the desired text position in **Special Effects** and be sure to check the box for **Delete Guide Line on Completion**. For this example, I am using **Winding River** as the name and **Top** for the position.

14. Click **OK**.

Repeat the exercise as many times as you wish to explore the different text positions and experiment with different length guide lines.
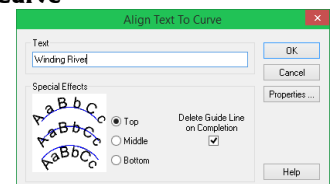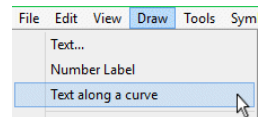
Troubleshooting Text Along a Curve

If your text label is strung out and the letters are too far apart, either the guide line is too long or the font size is too small. . If the font size is appropriate for the rest of the map, shorten the guide line and try again. On the other hand, if the font size is too small compared to the rest of the labels in the map, change the **Height** of the font in **Text Properties** to a larger value and try again.

Explode Text

Exploding the text changes the font characters into polygons. This has the advantage of ensuring the labels stay exactly the same size no matter what the resolution. A disadvantage is that the text is no longer searchable using features such as Zoom to text.

Text Label

The text label will be added to the drawing using the text properties that are set in Text Properties and the entity properties set on the Status Bar.

Node

A node is a control point. In this example, we have 4 nodes. Notice how the path bends between the first node and the last node guided by nodes 2 and 3. When drawing guide lines for Text Along a Curve, be mindful of the way you want the text to be read. The text will begin at the first node and end at the last node.
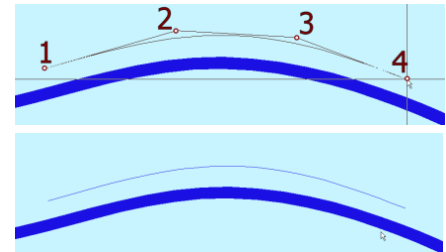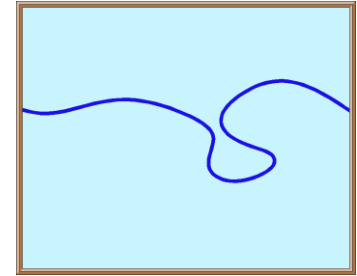
Guide Line

The size of the font and the length of the label will dictate how long the guide line should be. Experiment with the font size and guide line length to find the best combination for your application.

If your text label is bunched up and the letters are too close together or overlapping, either the guide line is too short or the font size is too big. If the font size is appropriate for the rest of the map, make a longer guide line and try again. On the other hand, if the font size is too big compared to the rest of the labels in the map, change the **Height** of the font in **Text Properties** to a smaller value and try again.

Number Labels

Adding number labels to entities in the drawing is a quick and easy task.

15. On the **File** toolbar click **Open** 📂.

16. Browse to CC3+'s **Tutorials\UserManual** folder, then select Number Labels.FCW.

Here we have a map with four city symbols. Let's imagine for a moment that we're going to use a legend for this drawing. Instead of putting text labels in the drawing, we want to number them.

17. Click **Number Label** 1₂3.

Take note of the **Command Prompt** to see what number CC3 is going to begin with. If the number is correct, hit ENTER. If the number is not correct, type what you want to be the first number, then hit ENTER. That first number is now on your cursor.

18. Click in the drawing to place a number label at each city symbol. Notice that the number held on the cursor advances each time you click to place a label.

19. After placing the last number label, hit ESC to end the command.

Completing our Map

Now that you have learned the basics about text, let us complete our map. If you want to continue along using our drawing, open **Tutorials/UserManual/First Map-10.FCW**.

1. Verify that the text properties we configured on page 36 is in effect. If not, set them according to the instructions.

2. Use **Text** **A** to label all the settlements with appropriate names. If you need to, you can change the justification the fly while the text is at your cursor. Use this to place the text `25 miles` above the center of the scale bar as well.

For the ocean, I want a slightly larger text label. Now, I could just use **Text Properties** **A** and change it, but his particular map style also have a text drawing tool available for me with predefined text properties. Let us try it out.

3. Click **Structures** 🏠. In the top right of the Symbol Catalog window, you should see a drawing tool named **Text Label 1**. Click it. The Edit Text dialog should pop up, and from here on, everything is exactly as before. The big difference here is that by using the text tool, it automatically configured some properties for us, most notably the text size.

Number Label

Number labels will be added to the drawing using the text properties set in Text Properties and the entity properties set on the Status Bar.
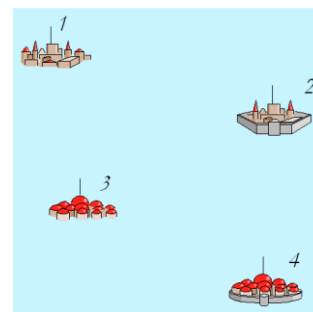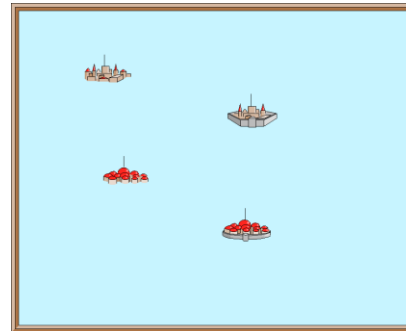
End Command

Using ESC to end the numbering command will close the command cleanly. Right clicking to end this particular command may throw the last number attached to the cursor into the drawing.

Justification

Justification is discussed in detail on page 37. The keys to adjust justification on the fly are listed below. Just hit the desired key while the text is on your crosshairs. You should see it move to put the justification point in the center of the crosshairs.
L – Left
C – Center
R – Right
T – Top
M – Middle
B – Bottom

4. In the Edit Text dialog, place a checkmark in the Multi-line textbox and enter Maldaric Ocean, one word on each line. Click OK, and place this text somewhere in the ocean above the compass rose.

We'll now label the forests and the hills. It can often be difficult to fit the entire text unto such terrain features, so maps will often use text at an angle to do this. And while you can set the angle in **Text Properties** [A], it is usually better to do it visually.

5. Start the **Text Label l** tool again, and enter the text Huntswood in the **Edit Text** dialog and click **OK**. If you are using my map you'll see that this text doesn't fit over the large forest northeast of the farm area.

6. Instead of placing the text immediately, look at the prompt. It reads **Place (Shift=15° Rot, Shift+Ctrl=Rot, Ctrl=Scale, Justify):**. Press and hold the [SHIFT] key while moving the mouse up or down. This will rotate the text. Once you have an appropriate rotation that will fit the forest, position the text and click to place it.

7. Label the hills and the other forests. If you are using our map, don't label the two forests to the top right, we'll be covering them up with a map title.

The Map Title

Most maps should have a title, and this is no exception. If I have the opportunity, I normally place this in an empty area of the map, but I am all out of those. I don't want too much clutter where my map title is however, that doesn't look good, so we'll make a box to put it in. We'll enhance this box a little later by using effects.

8. Click **Sheets and Effects** [icon]. Hit the **Add** button on the left side of the dialog to make a new sheet called TITLEBOX. Select this sheet in the list, and use the **Move Up** button to position it right above the sheet TEXT in the list. Make sure the new sheet is selected as the current sheet before clicking **OK**.

9. Make sure the rest of the settings on the status bar is as in the below illustration. For anything that is not correct, simply click the indicator, and change it. Remember that the **Solid** fill style is on the **Brush Patterns** tab of the fill style dialog. The rest of the dialogs should be straight forward.

| S: TITLEBOX | | P:0.000 mm | W: 0.00000 | L: TEXT LABELS | LS: Solid | FS: Solid |
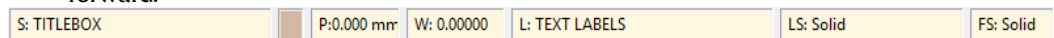
10. Use **Box** [icon] to draw a rectangle in the top right corner of the map, like in my illustration on the previous page.

11. Click **Text Properties** [A], and ensure that the Angle is set to 0 and justify to Top Center.

12. Use **Text** [A] to create a text label for the map. For my map, I used a multi-line label, King's Coast.

13. With the text on the crosshair, hold down [CTRL] while moving the mouse up/down to scale the text to a size that will fit neatly inside the brown box we made.

14. I've also added a single-line subtitle to the map using the same procedure, this one reads Year 375 after the Founding. Such a subtitle provides a bit more flavor to the map, as well as relevant information.

That's it. My current map is saved as **Tutorials/UserManual/First Map-11.FCW**.

Ins and Outs of Text Review

- Select fonts and text sizes that will enhance the appearance of the map and be legible at the intended print size and format.

- Use the best text justification for the particular task at hand.

- Text Along a Curve is used to add text to a curved guide line.

- Number Label allows us to quickly and easily add consecutively numbered labels to a drawing.

- [icon] Watch the Command Prompt. It is the vital link between you – the user – and CC3+. [icon]
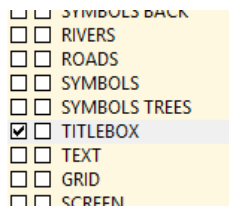

Text Label l

If you look in the top left of the preview image, you'll see a small plus-sign. Click it to expand the collection and see text tools of other sizes.

Text Tool

As of this writing, there is a minor bug with the text tool in the Structure catalog, as it fails to clean up properly after itself. If you wish to place structure symbols after using it, please click **Structures** [icon] again to reset appropriate settings.

SYMBOLS BACK
RIVERS
ROADS
SYMBOLS
SYMBOLS TREES
TITLEBOX
TEXT
GRID
SCREEN

Shift+Ctrl

Note that since the [CTRL] key also allows you to change the scale of your text, it is very easy to scale it inadvertently. If you need to rotate with finer granularity than [SHIFT] alone provides. If you intend to use the [SHIFT] + [CTRL] combination, I recommend to always hold down [SHIFT] first, and don't let it go again until after you have let go of [CTRL].

Effects

Effects are described in the Sheets and Effects chapter on page 60.

PRINTING AND EXPORTING

CC3+ can print any view of any map either to fit the page or to a precise scale factor. You can also create oversized prints by tiling across pages. Maps can also be exported to a regular image file, for whatever purpose you need.

Printing Your Drawing

The print dialog in CC3+ can be a little daunting with all its available options. CC3+ therefore offers two options, either the classic print dialog with all the options in a single dialog, or the print wizard, which will guide you through the process of choosing the correct options for your needs.

Printing using the Print Wizard

The Print Wizard is a great tool to help you print out your map exactly as you want it by helping you to pick the correct option.

To print using the Wizard, right click the **Print** 🖨 button and select Print Wizard. This will start the print wizard, which will take you through a handful of screens to choose your print options.

Step 1

In this step you can choose if you wish to start with the current print settings, or if you wish to load a saved setting. If you have previously printed during this CC3+ session, the wizard will use the settings last used, otherwise it will use the default printer settings. If you instead chose to start with saved settings, you will be taken to a new step allowing you to pick which saved setting to use.
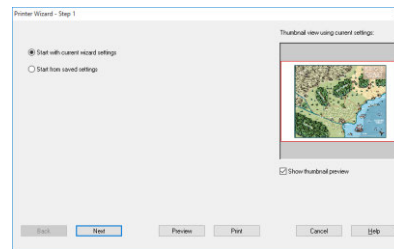
In addition to these options, there are also some parts of the dialog that will appear for each step:

Thumbnail view: This will show a small print preview based on the options you have set. The checkbox below can be used to toggle this preview.

Back, **Next**: These two buttons allow you to navigate through the wizard. The wizard will remember the settings when you go back and forth so you can easily go back if you need to change a setting on a previous page.

Preview: This button brings up the preview window. If you are doing a multi-page printout, you can toggle the printing of each individual page from this window, saving you from printing pages you don't need.

Print: This button starts the actual printing.

Cancel: This button closes the print wizard without taking any action.

Help: Shows relevant information in the help file.

Step 1a – Select Saved Settings

This step is only shown if you chose to load a saved setting. Simply click on the setting you wish to load from the list, and the settings will be loaded. Note that until you have saved any settings yourself, this list will only contain the **Default Settings** item.
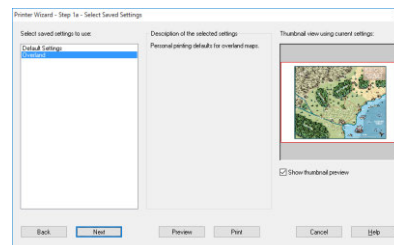
Step 2 – Select Printer

In this step you select the printer to use. If you need to change some of the printer properties, such as turning off duplex or setting print quality options, you can click the **Properties** button which will bring up the standard properties dialog for your printer.

If you need more than one copy, you can also set the number on this page.
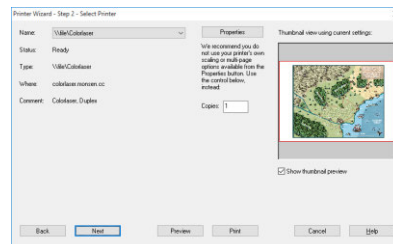
Step 3 – Select What to Print

You can now select between printing active view or everything:

Active View: Use this to print the view you currently have in your view window. To use this, zoom into the area you wish to print before starting the print wizard.

Everything: This will ignore your current view, and simply print your entire map.
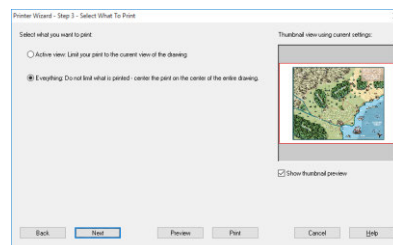
Step 4 – Select Print Scale

This step allows you to select the print scale. This is especially useful when you print battle maps for use with miniatures, but you would use this option whenever you wish to print your maps at a certain scale. If you just want the map to fill the paper without worrying about an exact scale, simply chose the **Fit drawing to print area** option.

Simply choose the desired scale from the list, or select **Choose your own scale** to set up a custom scale.
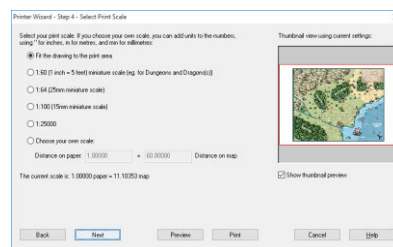
For example, if you've drawn a floorplan on which you have a 5' grid and you need the 5' grid squares to equal 1" on the paper, this is where you set the scale. In this case, you want **Distance on Paper** = 1" and **Distance on map** = 5'.

If you want the printed drawing to be a certain size, for example, let's say you have a view that is 400 <u>units</u> across and you want that printed output to be 4 inches across, set the **Distance on Paper** = 1" and the **Distance on map** = 100. The resulting print will be 4 inches across

Step 5 – Page Setup

Now you can select the paper size and orientation for the printout.

Additionally, if you need to, you can select the print margins. If you just wish to fill the page with the map, leave **Use minimum page margin** checked, and CC3+ will use the minimum margins supported by your printer.

If you find that parts of your drawing is cut of when using this option, this is typically due to the print driver reporting wrong values for the actual margins, in this case, you must set them manually.
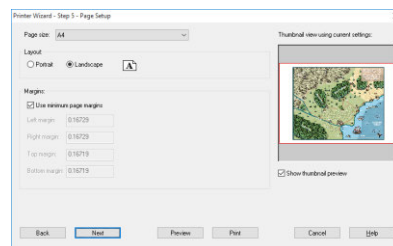
Units

CC3+ measures coordinates and distances with a user-definable system called Units. Feet, inches, and meters are common examples of units, but you can create your own, like miles, microns, or parsecs. When you open a new template, the units are set for you. Overland templates are set to miles or kilometers. Dungeon templates are in feet. By default, one unit is equal to one inch.

Step 6 – Tiled Printing

Sometimes, you need to print your map over multiple pages, for example if you have a large battle map.

Print everything on one page: this will ensure that the printout is always exactly one single page. If you picked scaling options on the previous step, this might result in the whole map not printing, since it will only print what would fit on one page, and skip the rest.

Tile printed image across multiple pages: With this option selected, CC3+ will print exactly the amount of pages you request. For example, if you print 2 horizontal tiles and 3 vertical tiles, CC3+ will produce 6 pages (2x3). If you need an overlap (perhaps to help when assembling the map), you can also specify this here.

Figuring out the exact number of tiles require some calculation (or guessing), but you can let CC3+ do this for you by checking **the Set Nr of tiles to show everything at current scale** box. This will set the number of tiles to the required number to ensure everything on your map is printed.

Draw frame at overlap edge will simply print a frame on the printout to show where the overlap starts, and you can set the color of this edge by clicking the Frame Color button.

Label tiled pages at bottom right will print the coordinates of each tile at their bottom right. This can be helpful when assembling a large tiled print.
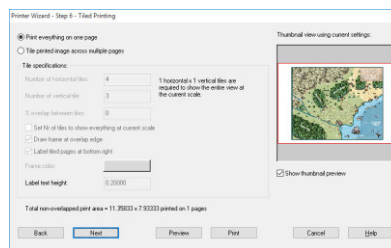
Step 7 – Print pages

This dialog allows for a few final options to be set before starting the print job.

Preview: If you are printing more than one page, now is the time to hit the preview button to check that the layout looks reasonable, and optionally disable the printing of individual pages by clicking on them in the preview window.

Advanced: This button will open a new dialog page allowing you to set additional options

Save settings: This button will open a new dialog page where you can save the current settings for later reuse.
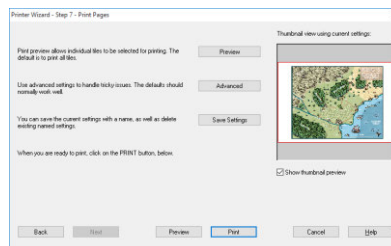
Step 7a – Advanced Settings

This step is only shown by clicking the **Advanced** button on step 7.

This page generally lets you set advanced options normally not needed for regular printing.

Scale printer resolution: This option may be required if you have a laser printer with low memory. Increasing this value reduces the resolution sent to the printer. This will not help save ink/toner, so only use it if your printer needs it, and keep the value as low as possible.

Printed width for 0-widht lines: You may have lines with zero width in your drawing. These generally look quite ok on screen, but on a printer with a much higher DPI than your screen, they can become too tiny, bordering on invisible. This setting forces such lines to be drawn a bit wider.

Color Printing: This is primarily useful if you are working with white/light entities on a dark view-window background. Since white entities on white paper tend to be invisible, you can chose how to handle this. For most normal CC3+ maps, you'll want to do **Print Colors**. If you select to **Print white things black** you will generally end up with a thick black border around your map. This is from the white screen mentioned on page 33.

Sheet Printing: By using this option, you can tell CC3+ to only print the current sheet, or to print each sheet on its own piece of paper. For normal CC3+ maps, you'll always want to use **All as one page** (even if you use tiled printing).

Step 7b – Save Print Settings

This page will only show by clicking **Save Settings** in step 7.

This page allows you to save the settings you've made so that you can use them later. Remember to give them a helpful name and description.
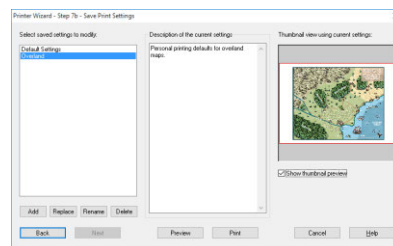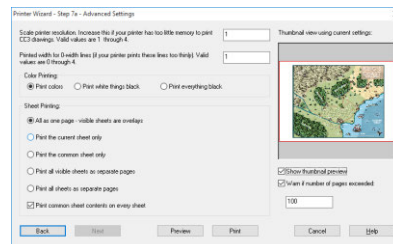
Printing using the Classic Dialog

On the file toolbar, click **Print** 🖶.

The **Print Drawing** dialog has five sections—**Printer**, **View to Print**, **Scaling**, **Tiling**, and **Options**.

- **Printer** allows you to select the printer to which you wish to send the drawing.

- **View to Print** allows you to select which **view to print**.

- **Scaling** allows you to set the scale of the printed drawing.

- **Tiling** allows you to create oversized prints on sheets of paper. **# Horiz** and **# Vert** sets how many sheets the print will use. A value of 1 in each box gives a 1 page print. **Overlap %** sets the overlap between sheets. A value of **0** means there is no overlap. To make it easier to stick sheets together, set the overlap to 5%.

- **Options** allows you to set print as black options if you're working with a dark colored **View Window**. Portrait or Landscape orientation is also set here.

No Fuss Printing

The **Print Drawing** dialog gives you plenty of options including views and scaling, but what are the best settings if you just want to do a plain print of your drawing? These settings will produce a print of your entire drawing on a single piece of paper.
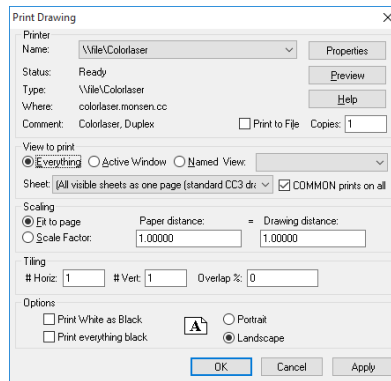
- **Printer**: your active printer

- **View to print**: Everything

- **Sheet**: All visible sheets as one page

- **Scaling**: Fit to Page

- **Tiling**: #Horiz 1, #Vert 1, Overlap % 0

- **Print White as Black**: not checked

- **Print everything black**: not checked

- **Portrait** or **Landscape**: as appropriate for your drawing

Then click **OK**.

Printing with Options

The plain print settings might be fine for many of your drawings, but there will likely be a need to print to a specific scale or make an oversize print. Let's look at those settings.
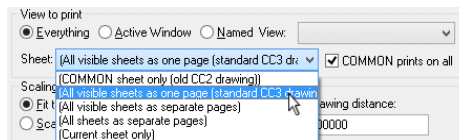
View to Print

Normally, you'll want to print everything. To see a view of what will be printed, click **Zoom Extents** 🔍 before opening the **Print Drawing** dialog.

If there is a particular view in the drawing you want to print, click **Zoom Window** 🔍 on the CC3+ interface, then zoom in on the view you want printed before opening the **Print Drawing** dialog window. Once in the **Print Drawing** dialog, select **Active Window** to print that view.

If you've previously created a Named View in the drawing and wish to print it, select **Named View** and then open the drop down menu to select which view you wish to be printed.

The **Sheet** drop down menu contains the various sheet printing options. For most situations, the **All visible sheets as one page** will suit you. CC3+ will print all visible sheets in the drawing as a single page.

View

Hidden layers and hidden sheets do not print. Show or hide layers and sheets appropriately before printing or exporting for the desired output.

Scale Factor

1:72 for miniatures, for example, or 1″ grid square equals 5 feet.

View to Print

Everything: The whole map will print, regardless of the current view. Active Window: The current view displayed in the View Window will print. Named View: If you have previously saved views of the map (View menu), they will be listed here. Sheet: The normal value is (All visible sheets as one page). COMMON prints on all: with this box checked, the COMMON sheet will print no matter what Sheet option you select.

Scale

Fit to page: Scales the selected view to best fit your paper size and orientation. Scale factor: Allows input of paper distance and drawing distance. Paper distance refers to the printed size on your paper. Drawing distance refers to distances as measured from the drawing. To measure distances on the drawing, click Info menu then select Distance. Pick two points between which you wish to measure.

Print

We recommend using Print Preview for any of your drawings before you commit paper and ink.

If you want all visible sheets as separate pages or you wish to print only the currently selected sheet, those options are in this drop down menu.

When a check is in the box for **COMMON prints on all**, the **COMMON** sheet will print on the output regardless of which **Sheet** setting is selected.

Named View

Named views are an advanced feature of CC3+. To find more information on Named Views, consult the Help files.

Units

CC3+ measures coordinates and distances with a user-definable system called Units. Feet, inches, and meters are common examples of units, but you can create your own, like miles, microns, or parsecs. When you open a new template, the units are set for you. Overland templates are set to miles or kilometers. Dungeon templates are in feet or meters. By default, one unit is equal to one inch.

Scaling

Now that we have our selected view, we can set our scaling.

Fit to page allows you to print the view selected in **View to Print** onto a single sheet of paper without worrying about scale or distance. It simply fits the view onto the paper size.

Scale Factor allows you to set a specific scale for the drawing. If you've drawn a floorplan on which you have a 5' grid and you need the 5' grid squares to equal 1" on the paper, this is where you set the scale. In this case, you want **Paper distance** = 1" and **Drawing distance** = 5'.

If you want the printed drawing to be a certain size, for example, let's say you have a view that is 400 **units** across and you want that printed output to be 4 inches across, set the Paper Distance = 1" and the Drawing distance = 100. The resulting print will be 4 inches across.

Tiling

Tiling makes it easy to create oversized prints of your drawings.

Set the number of pages horizontally and the number of pages vertically in **# Horiz** and **# Vert**. Use **Overlap %** to set the amount of overlap between the pages. For ease of assembling the sheets, use at least a 5% overlap.

Options

Check **Print White as Black** if you've created a drawing with white entities on a dark **View Window** color and you want the output to be black entities on a white background. For printers that require it, checking this box allows color #15 (white) to print as black.

Checking **Print everything black** will suppress color information and the drawing will print out only in black, even on color printers.

For orientation, choose either **Portrait** or **Landscape** as is appropriate for your drawing.
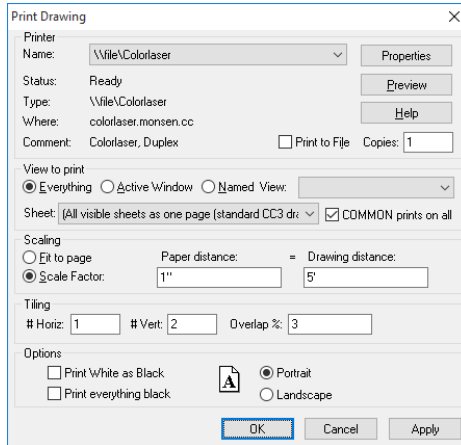
Printing Battlemats for Miniatures

Printing battlemats for miniature games is quite easy in CC3+. The drawing will have a grid - usually a 5 foot square grid. The squares are usually printed so that each 5 foot square in the drawing is 1 inch square on printed paper.

In **Printer Properties**, select the size paper onto which you'll be printing, usually Letter or A4.

Select **Scale Factor**. Set the **Paper distance** to <u>1</u>" and **Drawing distance** to **5'**.

In many cases, battlemats are larger than a single sheet of paper, so you'll need to use **Tiling**. Set **Overlap %** to **3**.

For **#Horiz** and **#Vert**, you can calculate the number of tiles needed based on drawing size and scale, but I find it usually easier to determine these values by guessing and then use **Preview**. If it is a small drawing that is wider than it is tall, try **2** and **2** and set on **Landscape**. Check **Preview** and then adjust the **#Horiz** and **#Vert** values accordingly. Once the preview shows that the tiling values are set appropriately, click **Apply**. Turn on effects then print the battlemat.

Common printing errors

If you print a drawing and the page prints blank then you likely either have the Sheet setting in **View to print** set to something other than **all visible sheets as one page** or you are using a scale setting which shows nothing in the current view.

If you are using a laser printer, you might find CC3+'s file size is too large for the printer to cope. If this is the case, from the **Tools** menu, select **Options**. Check the box for **Print alpha bitmap. Print resolution divided by** and set it to 2 or higher. Increment the value by 1 until the drawing prints.

Exporting Your Drawing

CC3+ supports a variety of file formats in which to save your drawing. A full explanation of each can be found in the **Help** files. Here, we'll explain the most common choices for export.

1. From the **File** menu, select **Save As**.

2. Click to open the **Save as type** drop down menu.

In the drop down menu, we find a list of the file formats supported by CC3+. We'll concern ourselves with the <u>BMP, JPEG and PNG</u> formats since these are the most commonly used export forms.

The steps described here will be for the **PNG Bitmap file** export. **JPEG Bitmap file** and **BMP Bitmap file** use the same steps, but the export will be in the respective file format.

3. Select **PNG Bitmap file**, then click <u>Options</u>. The **Bitmap Options** dialog opens. Here we input our settings for the desired output.

Settings

This section allows us to save useful settings and reuse them later. To use a previously saved setting, just select it from the drop-down box.

1"

One inch equals 1/12 of a foot. In decimal, that is .08333 of one foot. The print dialog accepts both the imperial (1") and the metric (0.8333) values. Use the one you are most comfortable with.

Overlap

An overlap isn't required. A small overlap, however, makes it easier to match the tiles together during assembly.

Preview

Turn the drawing effects off when using Preview to determine tiling values. The preview will draw much more quickly without effects.
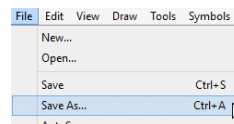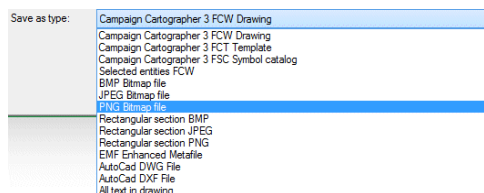
BMP, JPEG and PNG

The BMP, JPEG or PNG Bitmap file exports the entire drawing. The Rectangular section BMP, JPEG and PNG allows you to use crosshairs to designate an area of the drawing to export.

Options

The options dialog shown is sensitive to the file type chosen. To see the options dialog for image export, you need to select an image file type first. Options can also be accessed from the Tools menu>Options>BMP, JPEG, PNG. The values entered here will remain until new values are input.

To save a setting for future use, set the desired options in this dialog, then hit the **Save** button. This will pop up a small dialog allowing you to provide a name for this setting. If you already had a setting selected, it will suggest this name as the default, allowing you to overwrite this setting.

Finally, hitting the **Delete** button will delete the setting currently selected.

Pixel Size

In **Pixel Size**, we input the desired maximum size of the export in pixels. The size of the export directly depends on the intended use of the resulting file.
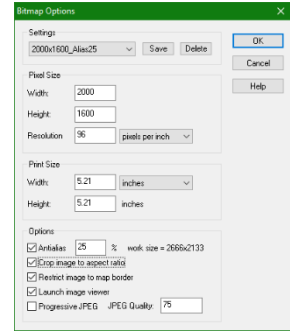
Screen Display

If the export is for display on the computer's monitor, determine the size by how big you want the image to appear on the screen. If you want wallpaper size, input the appropriate screen resolution such as 1024x768, 1280x720, or 1920x1080. If you want a smaller image, perhaps a 4"x3" image on the screen, multiple the desired dimensions by 96 to get the size in pixels. A 4"x3" image would be 4x96=384 and 3x96=288 so you'd input **Width**=384 and **Height**=288.

Print Display

If the export will be printed, enter a reasonable resolution, such as 300, and then enter the appropriate sizes under Print Size. This will automatically calculate (and update) the pixel sizes above. For a photo quality image, the resolution could be 300 pixels per inch. Plain line drawings and drawings that don't use bitmap fills will look fine at 150 pixels per inch.

Other Considerations

In addition to considering the intended use of the image, there are also certain limitations we need to consider. The first of these is time taken. Rendering a CC3+ map to an image file is a resource intensive process, and will take time. If you try to export a very large image, CC3+ will need to work for a very long time, perhaps as much as an hour or more, depending on your hardware and the export size requested. During this time, CC3+ will devote all its resources to rendering your image, and will appear to be hung.

The other consideration is available memory on your computer. To export an image of very large dimensions, you will also need a lot of available memory on your computer. If you run out of memory, CC3+ will be unable to complete the export. If you find this happening to you, you should try to reduce the export size.

Due to these issues, an export of more than 10000 pixels in either dimension is not recommended, but depending on map complexity and computer resources, you may be able to go as high as 20000 on some maps, but there is no guarantee that this will be possible with any given map.

Options

Under options we specify further details about our export, like what will happen if the aspect ratio of our map is not the same as the aspect ratio of the **Pixel Size**.

Antialias

Antialiasing is the process of making jagged edges look smoother. CC3+ doesn't use pixels for its internal representation of the map, but when we are exporting a map to an image file, we need to convert it to a pixel format. Since pixels are placed on a grid, they do an excellent job of representing a vertical or horizontal straight line, but once the line is drawn at any angle, we get jagged edges due to the pixel grid. Antialiasing attempts to reduce this by mixing the color of nearby pixels. For example, a black line on a white field will have grey edges after antialiasing is applied. This process makes the overall image much smoother and better looking. In the example to the right, the export resolution is the same, but the leftmost line is exported without antialiasing, while the rightmost used antialiasing.

Maximum Size

When you export an image, the image ratio is not usually the same as the bitmap size ratio. The Horizontal and Vertical Pixels count sets the maximum size limit for each dimension, not necessary the exact dimensions of the exported image.

Screen

Due to the differences between monitors, there are no way to exactly specify the dimensions of the image on the screen in inches. Multiplying by 96 used to be a simple approximation, but recent developments in screens have made the differences bigger than ever, especially when we include tablets and smartphones into the mix which have a very high DPI compared to desktop screens.

Larger Image

The final image will adhere to the size you specified in the Maximum Image dimensions, but CC3+ need to start out with a larger image for processing.

To enable antialiasing, check the **Antialias** box, and then provide a strength. The higher the strength, the better the antialiasing will look, but to be able to apply antialiasing to an image, **CC3+** must export a larger image than requested. The size of the image CC3+ needs to export is shown in the **work size** label. The higher the antialias strength, the larger these dimensions become. Keep in mind the "Other Considerations" from above when you select an antialias strength.

The recommended value is 25%, but you may need to reduce it to reach the highest resulting image sizes.

Crop image to aspect ratio

Usually, the aspect ratio of our map (or rectangular selection) is not exactly the same as the aspect ratio of our **Pixel Size**. We use the crop setting to determine how **CC3+** will handle this. If crop is enabled, **CC3+** treats the **Pixel Size** as maximums. It will use an image size that has the same aspect ratio as our map (or selection) and is as large as possible without being larger than the maximum height or width.

If we turn off the crop setting, **CC3+** will treat our selection as the center of the image, but will expand the selection either vertically or horizontally to fit the desired aspect ratio.

Crop Examples

In this example, we're exporting a rectangular PNG of the area outlined in red. The bitmap options are set for an 800x800 export.

When we disable **Crop image to aspect ratio**, we get the section of the map we chose with the crosshairs; but since the area we chose for export didn't fill the entire 800 x 800 bitmap size, **CC3+** used the selected section as the center of an 800 x 800 export.

If we use **Crop** with these same **Pixel Size** settings, **CC3+** will export just the section we selected with the crosshairs. CC3+ will use the **Maximum Image Dimensions** settings as the maximum limit of the export and ignore any extra outside the rectangular section. When the crosshaired selection reaches the first limit--in this case, the **Horizontal Pixels**--it will ignore the **Vertical Pixels** size limit because we didn't need it.

Restrict image to map border

Restrict image to map border will crop any entities beyond the map border from the export. This is useful if your map contains a screen polygon to cover entities extending over the border.

Launch Image Viewer

By checking this option, **CC3+** will launch the exported image in your default image viewer automatically as soon as the export is done.

Progressive JPEG

A progressive JPEG is well suited for displaying over slow connection. It will load a low quality version of the image first, then will gradually improve it as it loads more data. This ensures that full image is very quickly visible.

JPEG Quality

The value controls the appearance and file size of JPEG exports. Lower quality JPEGs open more quickly and have a smaller file size, but have less data and so image quality is lower. The higher the number value here, the better the image quality for your JPEG exports.
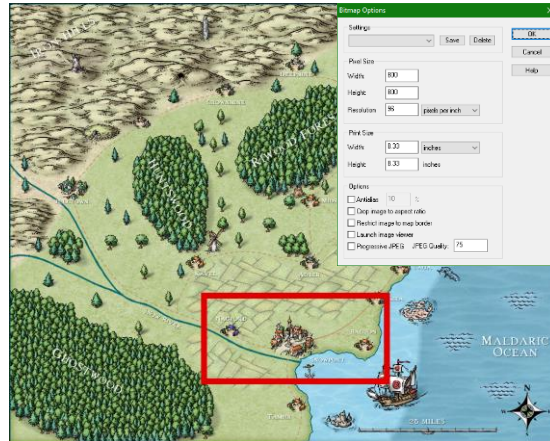
4. Once the option values and selections have been made, click **OK** to proceed.

5. Click **Save** to launch the export.

6. If you chose a rectangular selection option, CC3+ now requires you to select two corners for the export area. Watch the Command Prompt.

Printing and Exporting review

- For no fuss printing, use **Everything**, **All visible sheets as one page**, and **Fit to page**.

- For scaled prints, such as 5' square grid in the drawing = 1" square grid on the printed page, use the **Scale Factor**, **Paper Distance=Drawing Distance** fields.

- Always use Print Preview before you commit paper and ink.

- For screen display images, calculate your pixel dimensions based on 96 pixels per inch.

- For images intended by printing, fill in print size and resolution instead.

EDITING

Drawing tools can handle much of the map creation we'll do, but there may be times when we'll need to create from the ground up, so to speak. In order to do that, we'll need to understand some of the basic editing commands. Now that we've drawn our first map, and in doing so, explored drawing tools, let's look at how we can edit the entities we've put in our map.

Of all the things we can add to our CC3+ drawings, they can each be edited in some way, shape, or form. Every edit that we do involves right clicking to open the **Selection** menu. That **Selection** menu is a very powerful tool in CC3+. Before we move on, let's look at that menu in more depth.

Selection menu

The most basic of edits in a drawing involve isolating an entity into order to move or delete it. We then open the **Selection** menu to select **Do It** to execute the desired command. In that **Selection** menu, however, there are several options to modify what entities we have selected. There are times when entities are stacked so precisely that separating them with the pick cursor is impossible. The most common of these times would be separating the outline from the landmass entity to change the color or fill style of a landmass entity without affecting the outline. With a few short exercises, we can explore that **Selection** menu and we'll see how to separate entities no matter how precisely they are stacked.
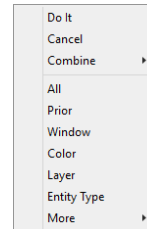
Pick Cursor

The pick cursor has the square selection box. The size of the pick box can be changed by changing the value in Tools menu, Options, Pick Cursor Aperture.

Select by Color

1. On the **File** toolbar click **Open** 📂.

2. Browse to CC3's **Tutorials\UserManual** folder, then select **Selection.FCW**.

| by Color | by Fill Style | by Layer | by Entity Type | by Line Style | by Entity Tag |

We see a row of colored blocks here, but in fact, each box is a stack of three entities placed precisely on top of each other. The label below each box indicates what property is different for one of the three entities in that stack. We're going to use the **Selection** menu to isolate that entity and pull it out of the stack.

3. From the **Info** menu, select List. Click to select the magenta 'by Color' box. Right click, then select **Do it**.

   Note the colors of the 3 entities. We have color 8, color 6, and color 3. We're going to pull the color 3 (blue) entity out of the stack. Close the **List** window.

4. Click **Move** 🔲 then click to select the magenta 'by Color' box. Right click, Highlight **Combine**, then select **And** out of the side menu. Right click, then select **Color**. Type **3** then hit ENTER. Right click, then select **Do it**. Click on the center of the 'by
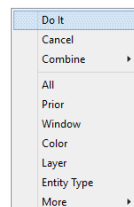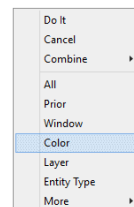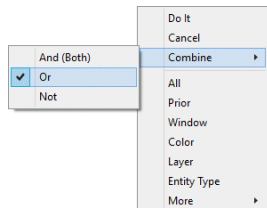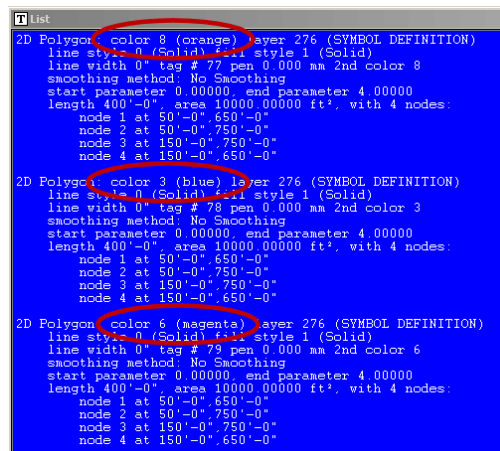
List

List reveals a plethora of information about the entities that are selected. This information includes: Entity type, Color, Layer, Line Style, Fill Style, Line Width, Tag number, Pen Width, Color 2, Smoothing Method, Parameters, Dimensions, and Nodes.

Color 8

The numbers are taken from the CC3+ color palette. Each position on the palette has a corresponding number.

Color' box to pick up the selected entity. Move the cursor down a bit then click to place it.

Selected Entity

When we click to select the 'by Color' box, we have actually selected 3 entities according to the command prompt. When we execute the selections Combine-And, Color, 3, Do it, we are telling CC3+ that of the 3 entities selected, we want to keep (Combine-And) only the entities that are color (Color) 3 (3). Do it executes the command.

Right Click

In this case, we're right clicking one more time to open the Fill Styles dialog so we can select the fill style out of the drop down menu. Instead of right clicking again, we could have typed 'Rock Fill' at the command prompt like we typed '3' to select color in Select by Color.

Entity

Let's think about what we did. We selected the blue box which was actually 3 entities. We told CC3+ that, of the entities we have selected, we want to keep (Combine-And) the entities that are fill style (More-Fill Style) Rock Fill (Symbols tab-Rock Fill)

5. Click **Redraw** 🔁.

We have now pulled the blue box out of the stack. If we check **List** on the magenta box again, we'll see that only two entities remain in the original position.

by Color

Select by Fill Style

We can use fill style in very much the same way we used color to isolate an entity.

6. From the **Info** menu, select **List**. Click to select the blue 'by Fill Style' box. Right click, then select **Do it**.

The **List** information shows that all three colors are the same, so we can't use color to isolate an entity. We can see, however, that two of the entities are **Solid** fill style and one entity is **Rock Fill**. Let's pull that **Rock Fill** entity out of the stack. Close the **List** window.
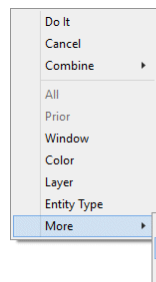
7. Click **Move** ⬚ then click to select the blue 'by Fill Style' box. Right click, Highlight **Combine**, then select **And** out of the side menu. Right click, highlight **More**. Select **Fill Style** out of the side menu. Right click, then select the **Symbol Fills** tab. Open the **Fill Style Name** drop down menu, then select **Rock Fill**. Click **OK**. Right click, then select **Do it**. Click the center of the blue 'by Fill Style' entity to pick up the entity. Move the cursor down a bit, then click to place the entity. The steps make it seem more complicate d, but we really aren't doing much differently than selecting by Color. By using the right click Selection menu, we tell CC3+ to keep only the Rock Fill entities.)
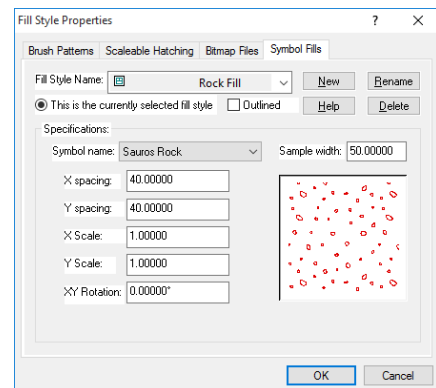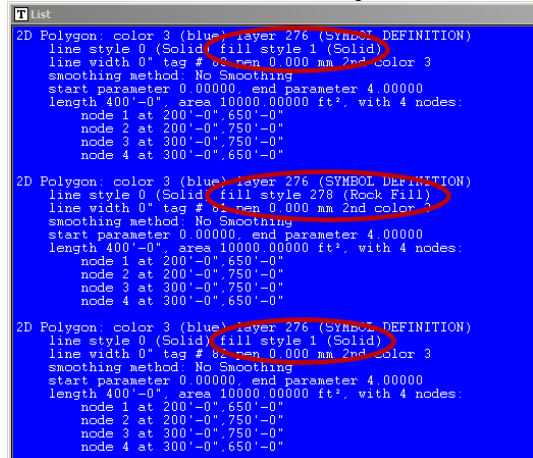
8. Click **Redraw** 🔁.

by Fill Style

Each of the other examples—by Layer, by Entity Type and by Line Style—are performed the same as we did for color and fill style. Using the same techniques, we can isolate the different entity in each stack on which to execute a command.

What happens, though, if all the properties are exactly the same? There could be times in your mapping experience when you have two identical paths or have laid two of the same symbol on top of each other. The properties such as color, fill style, layer, line style, and entity type will be identical. What do we do in that case? If all else fails, there is always **Entity Tag#**.

By Entity Tag#

Each and every entity that is added to a drawing is given an entity tag number. Even if all other properties are identical, the entity tag# will be unique. For our last example in this exercise, let's pull out an entity by tag number.

9. From the **Info** menu, select List. Click to select the orange 'by Entity Tag' box. Right click, then select **Do it**.
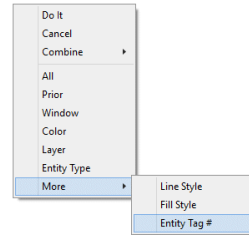
```
List
2D Polygon: color 8 (orange) layer 276 (SYMBOL DEFINITION)
    line style 0 (Solid) fill style 1 (Solid)
    line width 0" tag # 92 pen 0.000 mm 2nd color 8
    smoothing method: No Smoothing
    start parameter 0.00000, end parameter 4.00000
    length 400'-0", area 10000.00000 ft², with 4 nodes:
        node 1 at 800'-0",650'-0"
        node 2 at 800'-0",750'-0"
        node 3 at 900'-0",750'-0"
        node 4 at 900'-0",650'-0"

2D Polygon: color 8 (orange) layer 276 (SYMBOL DEFINITION)
    line style 0 (Solid) fill style 1 (Solid)
    line width 0" tag # 93 pen 0.000 mm 2nd color 8
    smoothing method: No Smoothing
    start parameter 0.00000, end parameter 4.00000
    length 400'-0", area 10000.00000 ft², with 4 nodes:
        node 1 at 800'-0",650'-0"
        node 2 at 800'-0",750'-0"
        node 3 at 900'-0",750'-0"
        node 4 at 900'-0",650'-0"

2D Polygon: color 8 (orange) layer 276 (SYMBOL DEFINITION)
    line style 0 (Solid) fill style 1 (Solid)
    line width 0" tag # 94 pen 0.000 mm 2nd color 8
    smoothing method: No Smoothing
    start parameter 0.00000, end parameter 4.00000
    length 400'-0", area 10000.00000 ft², with 4 nodes:
        node 1 at 800'-0",650'-0"
        node 2 at 800'-0",750'-0"
        node 3 at 900'-0",750'-0"
        node 4 at 900'-0",650'-0"
```

According to **List**, our entities are identical in every way with the exception of the entity tag number. They are numbered 92, 93, and 94. Let's grab number 92 and pull it out of the stack. Close the **List** window.

10. Click **Move** then click to select the orange 'by Entity Tag' box. Right click, highlight **Combine**, then select **And** out of the side menu. Right click, then highlight **More**. Select **Entity Tag#** out of the side menu. Type **92** then hit ⌐ENTER⌐. Right click, then select **Do it**. Click on the center of the 'by Entity Tag' box to pick up the selected entity. Move the cursor down a bit then click to place it.
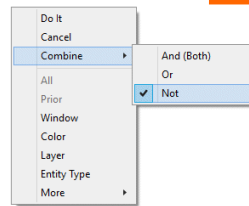
```
Do It
Cancel
Combine          ▶
All
Prior
Window
Color
Layer
Entity Type
More             ▶      Line Style
                        Fill Style
                        Entity Tag #
```

11. Click **Redraw** .

If we check **List** on the orange, by Entity Tag box again, we'll see that only two entities remain in the original position.
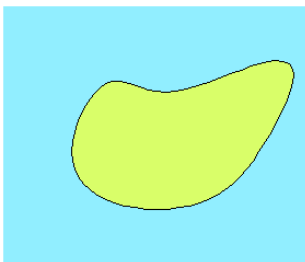
by
Entity
Tag

What about Not?

We can narrow our selection by using **Not** with the same techniques we used for **And**. When using **And**, we specify which attributes we want to keep. When using **Not**, we can specify which attributes we want to discard.

Let's use **Not** and apply the **Selection** menu methods to a situation in which we may find ourselves during a mapping session.

```
Do It
Cancel
Combine          ▶      And (Both)
All                     Or
Prior                 ✓ Not
Window
Color
Layer
Entity Type
More             ▶
```

Selection by Not

In an ordinary mapping session, we may have drawn a landmass only to decide that we want to change the color or fill style. The landmass entity has an outline and it is quite impossible using the pick cursor to select the landmass without selecting the outline, too. We'll use **Not** to isolate only the landmass entity.

12. From the **Info** menu, select **List**. Click to select the landmass. Right click, then select **Do it**.

Looking at our two entities, we find that color and fill style are different. The landmass is **Solid** fill style and color 122. The outline is **Hollow** fill style and color 0. We have choices using **And** or **Not** and color or fill style. Since we want to use **Not** for this exercise, let's use **Not** by color. Close the **List** window.

13. Click **Change Properties** then click to select the landmass entity. Right click, from the **Combine** submenu select **Not**. Right click, then select **Color**. Type **0** then hit ⌐ENTER⌐. Right click, then select Do it.

The **Change Properties** dialog opens.

```
List
2D Smooth Polygon: color 122 () layer 298 (LAND)
    line style 0 (Solid) fill style 1 (Solid)
    line width 0" tag # 107 pen 0.000 mm 2nd color 122
    smoothing method: Cubic B-Spline
    start parameter 0.00000, end parameter 7.00000
    length 540'-8 1/16", area 21445.00781 ft², with 8 nodes:
        node 1 at 500'-0",250'-0"
        node 2 at 400'-0",200'-0"
        node 3 at 350'-0",250'-0"
        node 4 at 300'-0",150'-0"
        node 5 at 350'-0",100'-0"
        node 6 at 450'-0",100'-0"
        node 7 at 500'-0",150'-0"
        node 8 at 550'-0",250'-0"

2D Smooth Polygon: color 0 (black) layer 298 (LAND)
    line style 0 (Solid) fill style 0 (Hollow)
    line width 0" tag # 109 pen 0.000 mm 2nd color 0
    smoothing method: Cubic B-Spline
    start parameter 0.00000, end parameter 7.00000
    length 540'-8 1/16", area 21445.00781 ft², with 8 nodes:
        node 1 at 500'-0",250'-0"
        node 2 at 400'-0",200'-0"
        node 3 at 350'-0",250'-0"
        node 4 at 300'-0",150'-0"
        node 5 at 350'-0",100'-0"
        node 6 at 450'-0",100'-0"
        node 7 at 500'-0",150'-0"
        node 8 at 550'-0",250'-0"
```

Do It

The steps are nearly identical to the operation we did with Add, but in this case, we told CC3+ to discard entities with the specified property instead of keeping it. In this case, we told CC3+ that of the entities we had selected, we wanted to discard (Combine-Not) the entities that are color (Color) 0 (0).
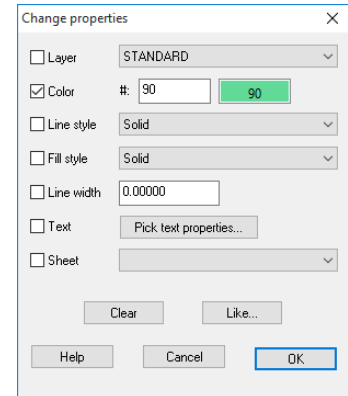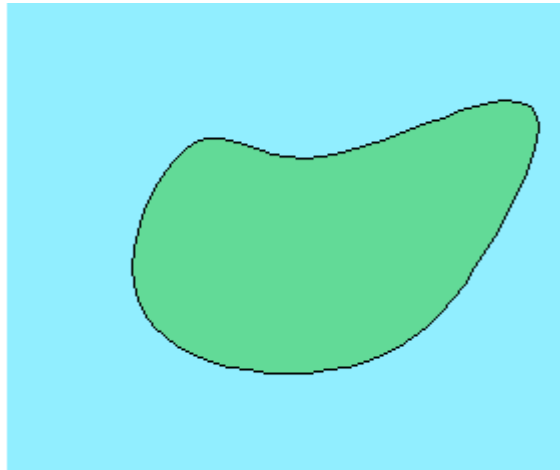
Change Properties

In this dialog, we can select which properties to change and what to change them to in one step. The check boxes allow us to select which properties of the selected entity to change, and the fields and drop down lists allow us to designate what to change those properties to.

14. Click to put a check in the **Color** box then type **90** in the **#** field. Click **OK**.

15. Click **Redraw** ♻.

Change properties dialog:
- ☐ Layer | STANDARD
- ☑ Color | #: 90 | 90
- ☐ Line style | Solid
- ☐ Fill style | Solid
- ☐ Line width | 0.00000
- ☐ Text | Pick text properties...
- ☐ Sheet
- Clear | Like...
- Help | Cancel | OK

Using the Selection menu, we left the outline unchanged and only affected the landmass entity

Node Editing

Endpoint

An endpoint is, as you might have guessed, the end node on a line or path. For a circle, the endpoint is at the quarter-circle. For an ellipse, it is at each axis.

What is a node? A node is basically a point - a one-dimensional location specified by its (x,y) coordinates. Each **endpoint** or vertex in a path or polygon is a node. For example, while drawing a path or a polygon, each time we click, we're inserting a node at that point. We can edit these nodes to change the shape of the entity we created. Let's do a short exercise to explore the single node edit commands.

1. On the **File** toolbar click **Open** 📂.

2. Browse to CC3+'s **Tutorials\UserManual** folder, then select **Node Edit.FCW**.

Here we have a simple path. Each numbered dot on the path represents a node. We'll use the node editing commands to affect the nodes and, as a result, the course of the path will be changed.

3. From the **Info** menu, select **List**. Click to select the path. Right click, then select **Do it**.

Using **List**, we can see the location of the nodes for this path. Note the x,y positions before we begin and we can compare after we edit the nodes. Close the **List** window.

List window:
```
2D Path: color 0 (black) layer 1 (STANDARD)
   line style 0 (Solid) fill style 1 (Solid)
   line width 0" tag # 112 pen 0.000 mm 2nd color 0
   smoothing method: No Smoothing
   start parameter 0.00000, end parameter 7.00000
   length 853'-6 5/8", area 0.00000 ft², with 8 nodes:
      node 1 at 150'-0",700'-0"
      node 2 at 250'-0",600'-0"
      node 3 at 250'-0",450'-0"
      node 4 at 150'-0",350'-0"
      node 5 at 50'-0",350'-0"
      node 6 at 100'-0",400'-0"
      node 7 at 50'-0",400'-0"
      node 8 at 50'-0",600'-0"
```

Node Edit

4. Click **Node Edit** ✎ then click on the node labeled **3**. Click on the dot labeled **A**. Right click to end the command.

The node that was 3 is now at A, and the course of the path has been changed as a result.
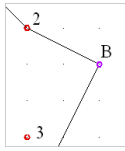
Insert Node

5. Click **Insert Node** then click on the path between 2 and 3. Click on the dot labeled B.

We inserted a node that wasn't there before, and by placing that node at point B, we altered the course of the path. Notice that the path no longer goes through the point labeled 3. This is because we moved the node that was located there to A.

Delete Node

6. Click **Delete Node** then click on the node labeled 6.

The node that was at 6 is no longer there and, as a result, the course of the path has been changed.
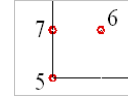
If we look at **List** now, we can see that the x,y positions of the nodes are different than they were when we started. We moved one, we added one and we deleted one. Each change to the nodes has altered the course of the path.

```
T List
2D Path: color 0 (black) layer 1 (STANDARD)
    line style 0 (Solid) fill style 1 (Solid)
    line width 0" tag # 112 pen 0.000 mm 2nd color 0
    smoothing method: No Smoothing
    start parameter 0.00000, end parameter 7.00000
    length 926'-10", area 0.00000 ft², with 8 nodes:
        node 1 at 150'-0",700'-0"
        node 2 at 250'-0",600'-0"
        node 3 at 350'-0",550'-0"
        node 4 at 250'-0",350'-0"
        node 5 at 150'-0",350'-0"
        node 6 at 50'-0",350'-0"
        node 7 at 50'-0",400'-0"
        node 8 at 50'-0",600'-0"
```

This short exercise has enabled us to explore the single node edit commands. These commands can be used to edit other entities such as polygons. When drawing a map, we can use node edit commands to adjust the course of a river, for example.
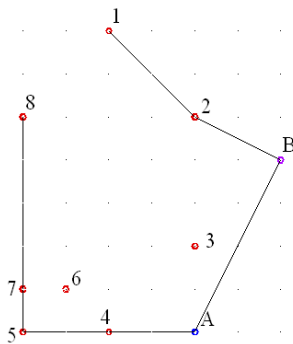
Editing Polygons

All the entities we draw have nodes. These nodes dictate the shape of that entity no matter if it is a path or a polygon. Let's use the node editing commands to change the shape of a polygon.

The polygon we have here could be a landmass in a drawing. After it was drawn, we decided we wanted to change the shape without having to redraw the whole landmass. Let's use the node editing commands to change the shape.

7. Click **Node Edit** then click on the dot labeled **C**.

While holding the node on the cursor, move the cursor around in the **View Window** to observe how the polygon changes shape.

Click on the dot labeled **F**. Right click to end the command.

8. Click **Redraw** .

9. Click **Delete Node** then click on the dot labeled **D**.

10. Click **Redraw** .
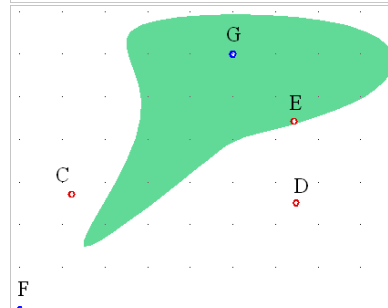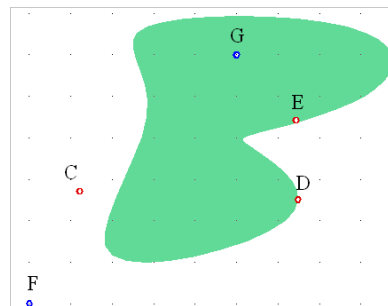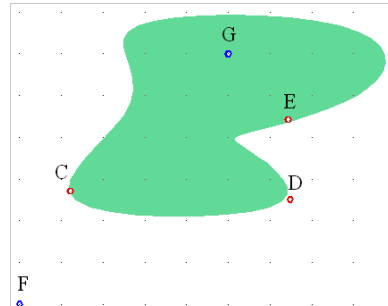
Shape

The reference points shown in this exercise are points picked at random to demonstrate the effect of the node editing commands on the polygon. By using reference points in the exercise, your results should match the illustrations shown. The node editing commands could be used anywhere around the perimeter of the polygon to change the shape as needed.

Click Each

If you click and miss a path, the command ends. If this happens, just right click to relaunch the command, click the blue path to reselect it, and continue.
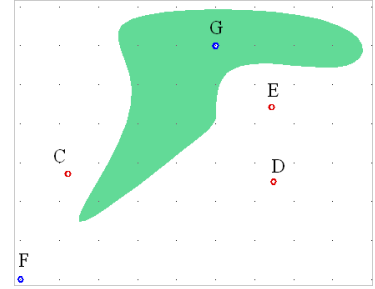
11. Click **Insert Node** then click on the dot labeled **E**.

While holding the node on the cursor, move the cursor around in the **View Window** to observe how the polygon changes shape.

Click on the dot labeled **G**.

12. Click **Redraw** .

By using the node edit commands, we were able to alter the shape of the landmass entity without having to redraw it.

Trimming

As we draw in CC3, we'll have occasion to trim entities to fit or trim them with precision to meet a boundary such as a border or another entity. We have trim commands that make these tasks quick and easy.

13. On the **File** toolbar click **Open** .

14. Browse to CC3+'s **Tutorials\UserManaul** folder, then select **Trims.FCW**.

Trim to Entity

We can use **Trim to Entity** when trimming to a boundary or border or when trimming to another entity. In these exercises, the blue path will be the entity to which we will trim using the various trim commands.

15. Click **Trim to Entity** then click the blue path in exercise 1. Click each of the black paths in succession and note how the path trims to the chosen entity. In this example, we clicked each of the black paths across the bottom of the exercise.
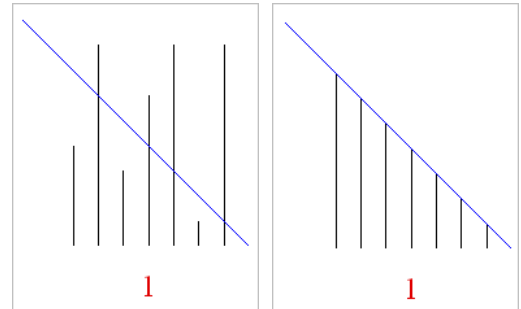
Trimming Navigation Lines

A common use for **Trim to Entity** would be to trim navigation lines in a drawing. Let's use **Trim to Entity** to trim the nav lines in our exercise drawing. Pretend that the blue rectangle is our map border.

16. Click **Trim to Entity** then click the blue path at the top of the map border. Look at the nav lines radiating from the cluster. Click on the nav lines that look like they will intersect with that top map border path.

17. Repeat **Trim to Entity** on the other 3 sides of the map border. In each case, select the map border side and then trim the nav lines that will intersect it.

Trim to Intersect

For exercise 2, we'll look at **Trim to Intersect**. This command takes two intersecting paths and trims them where they meet.
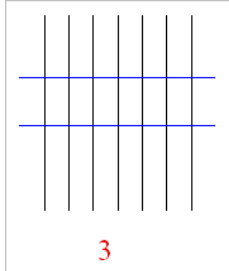
18. Click **Trim to Intersect** then click the first two of the black paths in exercise 2. Click to repeat the command, then click on the second pair of black paths. In this example, we clicked each of the paths across the bottom of the exercise. As with the
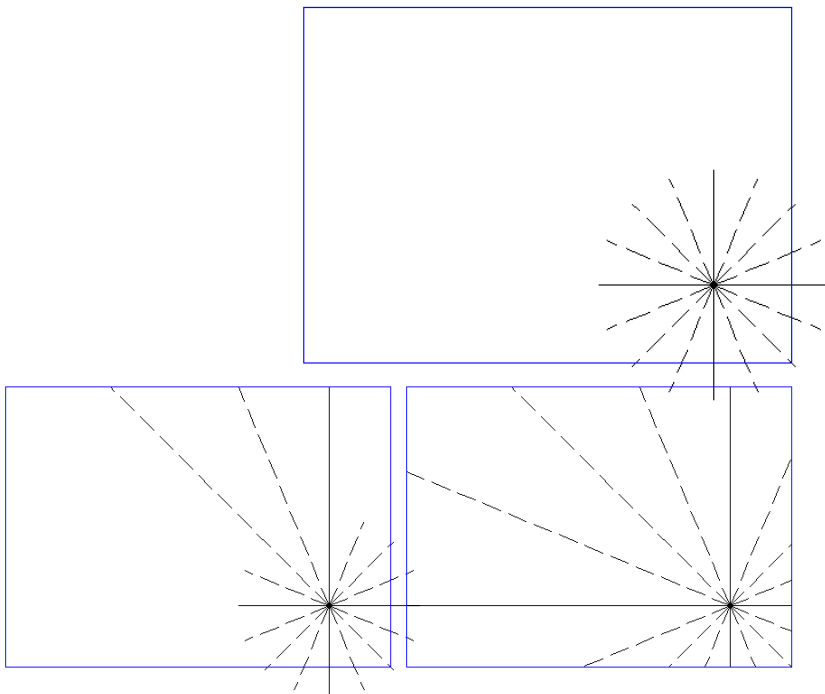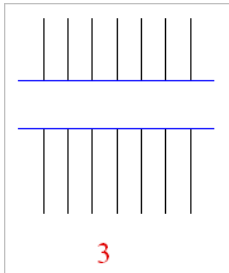
previous exercise, the paths don't have to actually cross to trim them to intersect. They just have to be on an intersecting course.

Break

3

Using **Break**, we take a chunk out of a path or poly.

19. Click **Break** [icon] then click on the first black path in exercise 3. The **Command Prompt** reads **Break starts at point:**. Click the first path where one of the blue paths intersects it, then click where the other blue path intersects it. Right click to repeat the command, then do the next black path. This command is useful for cutting openings in walls.
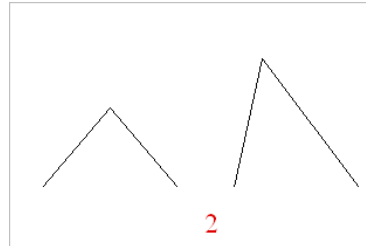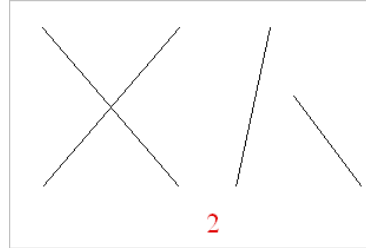

2

Split

3
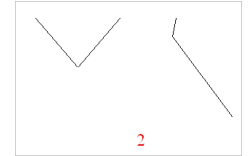
Split cuts a line or path into two pieces. It will also cut a rectangle into a path or circle into an arc. Split is not a command that will change the appearance of things in the drawing, so to see the effects of **Split**, lets look at the path in exercise 4 with **List** first.

20. From the **Info** menu, select **List**. Click to select path in exercise 4. Right click, then select **Do it**. The entity in exercise 4 is a single path with two nodes. Close the **List** window.

21. Click **Split** [icon] then click on the path. The **Command Prompt** reads **Split entity at point:**. Click somewhere along the length of the path. When we look at the drawing, it doesn't appear that anything changed, so let's look at the resulting split with **List**.

22. From the **Info** menu, select **List**. Click to select both paths in exercise 4. Right click, then select **Do it**. Even though there is no change we can see in the drawing, **List** shows us that **Split**, in fact, split the single path into two paths.

```
T List
2D Path: color 0 (black) layer 1 (STANDARD)
     line style 0 (Solid) fill style 1 (Solid)
     line width 0" tag # 255 pen 0.000 mm 2nd color 0
     smoothing method: No Smoothing
     start parameter 0.00000, end parameter 1.00000
     length 160'-0", area 0.00000 ft², with 2 nodes:
         node 1 at 360'-0",520'-0"
         node 2 at 360'-0",360'-0"
```
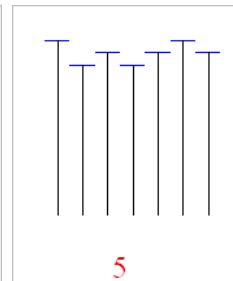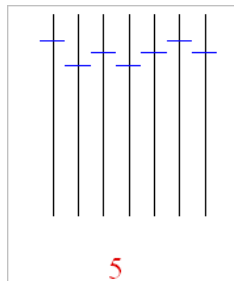
```
T List
2D Path: color 0 (black) layer 1 (STANDARD)
     line style 0 (Solid) fill style 1 (Solid)
     line width 0" tag # 346 pen 0.000 mm 2nd color 0
     smoothing method: No Smoothing
     start parameter 0.00000, end parameter 1.00000
     length 80'-0", area 0.00000 ft², with 2 nodes:
         node 1 at 360'-0",440'-0"
         node 2 at 360'-0",360'-0"

2D Path: color 0 (black) layer 1 (STANDARD)
     line style 0 (Solid) fill style 1 (Solid)
     line width 0" tag # 255 pen 0.000 mm 2nd color 0
     smoothing method: No Smoothing
     start parameter 0.00000, end parameter 1.00000
     length 80'-0", area 0.00000 ft², with 2 nodes:
         node 1 at 360'-0",520'-0"
         node 2 at 360'-0",440'-0"
```

Trim

Using **Trim**, we can cut off the end of a path.

23. Click **Trim** [icon] then click on the bottom of the first black path in exercise 5. The **Command Prompt** reads **Trim to point [pick point]:**. Click where the blue path intersects the first black path. Right click to repeat the command, then do the next black path.

5

5

Across the Bottom

Click Undo twice, then try the exercise again, but this time clicking across the top of the paths to observe the different results.

2

Blue Paths

The blue paths in this exercise are guidelines only so your results will look similar to our example. The path can be broken anywhere along its length.

Select Both Paths

Because there are now two paths instead of one, we'll have to click to select each of them, or we'll click off the path to open a selection window that will encompass both paths.

Editing with Drawing Tools

Drawing tools not only let us draw, they also let us edit entities in our maps. Let's look at some edits we can do using drawing tools.

Edit

Let's pretend we've drawn a landmass entity in our map. We liked it at first, but as the map progressed, we decided we wanted to add to the landmass to alter its shape. We don't need to completely redraw it. We can edit it using the drawing tool we used to create it.

1. On the **File** toolbar click **Open** 📂. Browse to CC3+'s **Tutorials\UserManual** folder, then select **First Map-06.FCW**.

Here is our map in progress. Let's add a peninsula to the coastline.
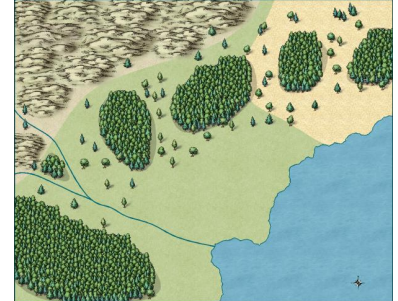
2. Click **Default Landmass** 🏝️.

The **Command Prompt** reads **Fractal polygon: First point (E-Edit):**. Type **E**. The **Command Prompt** now reads **Pick start node** and the cursor changes to a Pick cursor. Click on the coastline at a place where you want the peninsula to start.

Once we've clicked to pick a start point, the **Command Prompt** reads **Next point (DEL ~ back, Space ~ Randomize, L/R Arrows ~ Depth, U/D Arrows ~ Strength, T ~ Trace):**. Draw the peninsula. When you've almost completed the new coastline, right click just before you reach the old coastline. The **Command Prompt** reads **Pick end node to connect to:**. Click on the old coastline in the place you wish the new peninsula to end.

3. Click **Redraw** 🔄.

With very little fuss, we've added a new section of coastline to the existing landmass.

Trace

Let's pretend for a moment that we want to take a regional map and pull a section out of it to create a local, area map. We <u>copy</u> and paste the section of the map we want to show in detail into a new, appropriately sized map, but now we have edits to do. We have the section of the map we want in our new map, but we also have the bulk of the land and sea entities extending outside the map border, and we don't want that. Let's get rid of those by using **Trace** to duplicate the sections of the entities we want to keep, and then erase the originals.

1. On the **File** toolbar click **Open** 📂. Browse to the **Tutorials\UserManual** folder, then select **Local Map.fcw**.

We'll start with the land entity. We'll use the same drawing tools we used to create the entities with, only this time, we'll use the **Trace** function to recreate the section of the polygon we want to keep.

2. Click **Default Landmass** 🏝️ then click at <u>point A</u> in our example.

The **Command Prompt** now reads **Next point (DEL ~ back, Space ~ Randomize, L/R Arrows ~ Depth, U/D Arrows ~ Strength, T ~ Trace):**. Type **T**. The **Command Prompt** now reads **Entity to trace:**. Click somewhere on the coastline to select the landmass entity. The **Command Prompt** reads **Starting point of portion:**. Click at the top of the landmass (where the coastline meets the map border) where we want
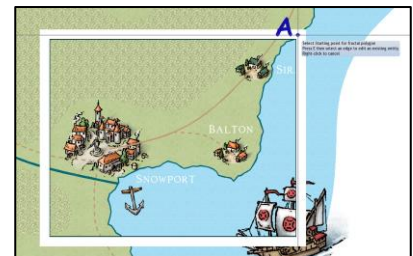
Copy

From the Edit menu, select Copy. This is a different Copy than the Copy button. This Copy copies the selected entities to the clipboard whereas using the Copy button only copies the selected entities into the drawing. This command can also be accessed by right clicking the Copy button, then selecting Copy to Clipboard.

When doing a clipboard copy, make sure to pay close attention to the prompt. A common mistake is to ignore the prompt for clipboard origin, thus ending up with nothing on the clipboard. The clipboard origin prompt may seem strange or unnecessary at first, but it is of vital importance when you need to paste something at a precise location.

Point A

Point A, B, C and D is not an exact location. It is simply a spot above the top of the portion of the entity we want to trace and outside the template so the landmass tool 'sets' to the map border.
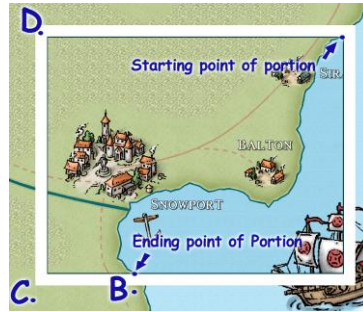
to start the trace. The **Command Prompt** reads **Ending point of portion:**. Click at the bottom of the landmass where we want the drawing tool to stop tracing. Click at point B in our example and then click at point C and finally point D. Right click to end the command.

3. Click **Send to Back** 🔳. Right click, select **Prior**, then right click, select **Do it**. This step takes the landmass entity we just drew and pushes it to the back of its sheet.

4. Click **Default Terrain** 🟫 then select **Terrain Default, Farmland**. Repeat the steps in step 2, but this time, trace the two farmland entities, one at a time.

5. Click **Erase** 🖊 then select the landmass entity, the shallow sea entity and the farmlands entity <u>outside the template</u>.

6. Click **Trim** ✒ then select the river that runs near Snowport. <u>Trim it</u> at the map border. Repeat the process for the 3 roads.

We now have an area map extracted from our regional map. The text will need to be adjusted, and the symbols might need to be tweaked a little for scale and placement, but the hard part of the process is complete using the Trace options of the drawing tools. We have land and sea entities that are contained within the borders of our template.

We can click **Numeric Edit** 🔲, select a text label and then click **Properties** to adjust the size and font of the text in our new area map. We can also use **Fractalise** ⇶ on our coastline to add detail to it, but this is a bit more involved since the landmass contains of two entities (the main landmass, and the outline).

To finish up, use **Scale** 🔲 on the symbols to fit them on the new map, and add additional detail as appropriate. You may also find that you need to move the roads a little bit as you scale down the symbols, which gives you a perfect opportunity to use the **Node Edit** 📐 command from earlier. The map in the image is very far from done, but the extraction process from the larger map is done, now all we need to do is to fill out all the extra detail that the regional map didn't show.

Editing Review

- Entities that are selected for edits can be filtered by using the **And** or **Not** functions of the **Selection menu**.

- The editing buttons, like most other buttons on the interface, can be right clicked to open a list of more options for that command.

- Using node edits, we can alter the shape of paths and polygons.

- Trim commands allow us to edit entities to fit precisely or alter their length and shape.

- Using Drawing Tools, we can trace or edit existing entities in the drawing.

- 🚩Watch the **Command Prompt**. It will tell you what options you have and what input CC3+ is waiting for from you. 🚩

Outside the Template

Click to select them at points outside the map borders of our current template. We want to erase the entities we copied over, not the ones we just drew.

Trim it

When selecting an entity to trim, we must remember to select it by clicking on the part of it we wish to keep. If you select the entity by clicking on the part outside the map border instead of the inside, that is the part which would remain.
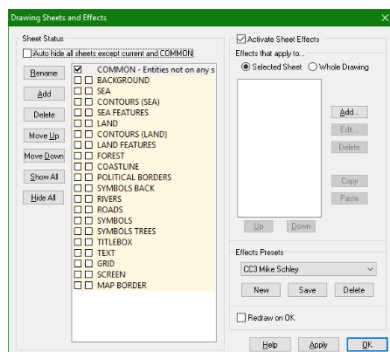
SHEETS AND EFFECTS

One of the very exciting changes in CC3 over CC2Pro was the way CC3 used sheet effects in our drawings. CC3+ expands on this by introducing additional effects and improved performance. These effects can transform ordinary drawings into something quite extraordinary. Before we look at the effects themselves, let's look at sheets and see how sheets work in our drawings.

Sheets

Symbols or entities placed with drawing tools are placed on an appropriate sheet such as SEA or LAND FEATURES. Entities added using draw buttons are placed on the current sheet. Sheets can be thought of as a stack of transparent pages. Like layers, sheets can be hidden or shown. Unlike layers, however, all entities on each sheet are sorted into order by sheet name. Layers do not dictate entity order whereas sheets force entity order. When we use Reorder commands like **Bring to Front** or **Send to Back**, the entities can only be reordered within the confines of their sheet.

Let's begin by looking at sheets and how they work in a drawing. Click **Open** and then browse to the **Tutorials\UserManaul** folder. Select **Example.fcw**, then click **Open**.

We see here a small overland map. If we click the **Sheets** indicator S: Common Sheet, we see the list of sheets that are in this drawing.

COMMON

For the sake of these tutorials and explanations, we'll refer to COMMON as a sheet, but understand that COMMON isn't truly a sheet. Rather, it is that which is not on any sheet. It cannot have effects applied to it, and it cannot be deleted or hidden. For best results, do not put entities on COMMON.

Sheet Order

The order in which the sheets appear is specific. The **Drawing Sheets** dialog shows us that <u>**COMMON**</u> is listed first, followed by a long list of sheets. This tells us that when CC3+ displays our map, it first draws the entities on the COMMON sheet. Then it starts with the next sheet (SEA in our example), and draws that on top of what it has already drawn. CC3+ then proceeds down the list of sheets, always drawing the next one on top of the previous sheets. This means that entitles on sheets at the bottom of the list is drawn on top of entities from higher up sheets.

In this drawing, any entities added to the **SYMBOLS** sheet, for example, will always be on top of all entities on the **SEA** sheet and the **LAND** sheet as well as all other sheets above it on the **Drawing Sheets** list; and they will always be under all entities on the **MAP BORDER** sheet as well as all other sheets below it on the **Drawing Sheets** list.

If we look at the main sheets individually, we see that each sheet is a transparent 'page' that holds its own entities.

When stacked together, these transparent 'pages' form our map.

BACKGROUND
SEA
LAND
LAND FEATURES
SYMBOLS
MAP BORDER
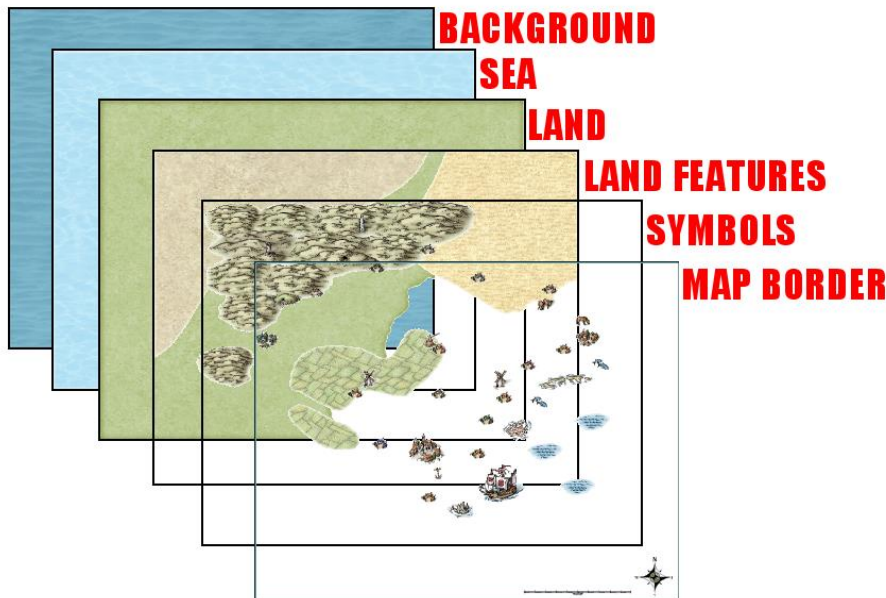
Managing Sheets

If you just want to hide or show sheets, use the checkbox controls to make any one sheet current, or to hide/show any sheet.

Rename allows us to change the name of a sheet in the list. Click the sheet name to highlight it, then click **Rename**. Type in the new sheet name, then click **OK**.

Add allows us to add a new sheet to the drawing. Click **Add**, type in the new sheet name, then click **OK**.

Delete allows us to remove a sheet from the drawing. Click the desired sheet name to highlight it, then click **Delete**. Click **Yes**.

Move Up/**Move Down** allow us to reorder the sheets in the drawing. Click to highlight the desired sheet, then click **Move Up** or **Move Down** as many times as necessary to move the sheet into the desired order position.

Show All allows us a quick way to reveal all hidden sheets rather than have to click to remove the **Hide** status from each individual sheet.

Let's create a new sheet, put entities on it and then move the sheet in the sheet order. Either open up the overland map you have been working on throughout this manual, or my map from **Tutorials/UserManual/First Map-11.FCW**. You may remember that the last thing we did with this map was to add a map title in the top right corner (see page 40). The background for this title does cover up the map a bit and it does look a bit harsh, so let us start by using some effects to soften it up.

1. Click **Sheets and Effects** 🗒. Select the **TITLEBOX** sheet in the list, and then make sure **Activate Sheet Effects** is checked.

The list to the right showing the currently configured effects for this sheet is blank, meaning that there are no effects defined yet. Let us rectify that.

2. Click the **Add...** button at the right-hand side of the **Drawing Sheets and Effects** dialog to add an effect to the currently selected sheet. In the **Add Effect** dialog that shows up, pick

Sheets

There is no practical limit to the number of sheets a drawing can contain. A single drawing can accommodate over 30,000.

Delete

All entities on the sheet will be deleted from the drawing along with the sheet itself. This edit cannot be undone. Make certain that you are prepared to delete a sheet before you click Yes.

Reveal All

This function comes in handy if we'd checked the **Auto hide all sheets except current and Common** box in order to work on a particular sheet and we now want to reveal all sheets.

Edge Width

If you look at the finished effect, you can see that the outer edge of the title background seems to fade into nothingness. Most of the shape uses the opacity value specified under Inner Opacity, but the edge area, as defined by the edge width, have a variable transparency slowly moving from the Inner Opacity to the Outer Opacity value. In this case, we used it to have it fade away at the edge, but we could have set the Outer Opacity to 100% instead which would have caused it to end in a solid edge instead.

Edge Fade, Inner from the list. The effect gets chosen immediately upon clicking on it, so if you happen to miss-click, simply click **Cancel** in the resulting dialog and do this step again.

3. In the **Edge Fade, Inner** configuration dialog that pops up, set an **Edge Width** of 1 unit, an **Inner Opacity** of 82% and an **Outer Opacity** of 0%. Also make sure to select **Map Units** as the **Effect Units**, and enable **High Quality**.

4. Click OK to close and confirm the Edge Fade, Inner dialog, make sure there is a checkmark next to Redraw on OK, then click OK to close the Drawing Sheets and Effects dialog.
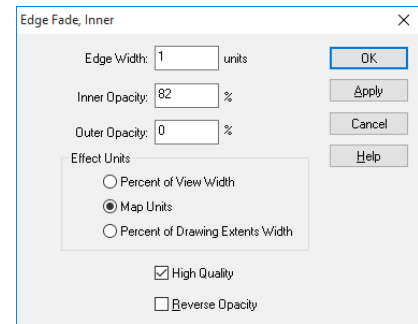
The background for the title text should now be a bit transparent, allowing the map behind to shine through. You have just added the first custom effect to the map.
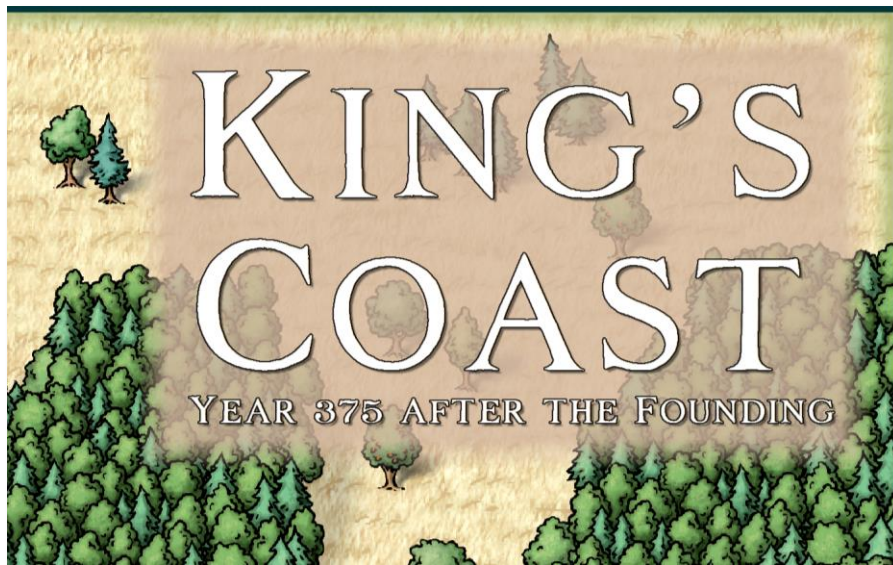
Let us play a bit more around with the sheets and effects, and see what we can do with the grid.

5. Click **Sheets and Effects**

This example already has a **GRID** sheet. We wish to delete the existing one and create a new one, as this removes any entities on the sheet, as well as remove any effects specified. Select the **GRID** sheet in the list, then click **Delete**. Confirm the deletion by clicking **Yes**.
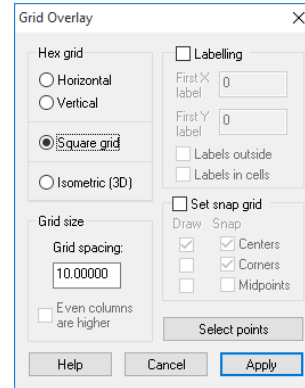
Now, click **Add**. Type **GRID**, then click **OK**. Be sure **GRID** is selected as the current sheet, then click **OK**.
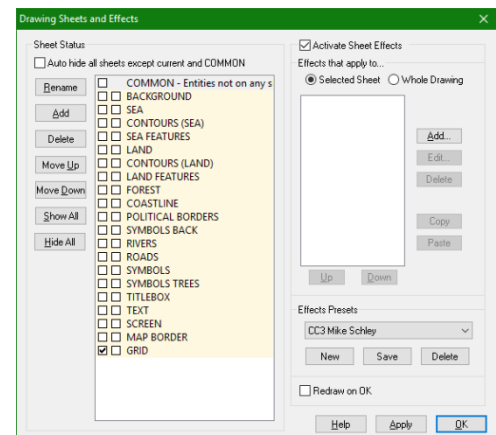
6. Click color 2 (red) on the **Color Bar**.

7. Click **Grid** ▦. In the **Grid Overlay** dialog, select **Square grid**. For **Grid size** and input **Grid spacing** of **10**. Uncheck **Labeling outside** and then uncheck **Labeling**. Uncheck **Set snap grid** options. Click **Apply**.
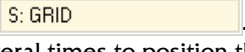
We now have a grid on our map. Let's order the sheets to put the grid below the symbols.

8. Click the **Sheet** indicator [S: GRID]. With **GRID** highlighted, click **Move Up** several times to position the **GRID** sheet above the **SYMBOLS** sheet in the **Drawing Sheets** list. Click **OK**.

9. Click **Redraw** ↻.

Color Bar

The color bar on the left shows a number of colors from a total palette of 256 colors. The current color is marked with a heavy black border. Use the Color Bar to select a different color at any time, even in the middle of drawing or editing. Alternately, we can click the Color Indicator and select a color out of the complete palette.

If you can't see the color bar, click the **Screen Tools** ➡ button, and click to place a left-facing arrow in the **Color bar** box.

Labeling

If you uncheck **Labelling** before you uncheck **Labels outside** and **Labels in cells**, these options will be grayed out, but they will still be applied to the new grid. Make sure to uncheck these individually if you don't want them.

We could be done with the grid at this point, but let's say we want to make the grid less bold. We'll begin our exploration of sheet effects by making the grid semi-transparent.

10. Click **Sheets and Effects** 📑. In the **Drawing Sheets and Effects** dialog, be certain the **GRID** sheet is highlighted. Click to check the **Activate Sheet Effects** box, then click **Add**. Out of the list of effects in the **Add Effect** dialog, click **Transparency**. In the **Transparency** dialog, set **Opacity (%)** to **30**. Click **OK**. Click **OK**.

Add

Do not confuse the **Add** button for effects located at the right-hand side of the dialog box with the **Add** button for sheets, located at the left-hand side.

By making it semi-transparent, our grid is now much less intrusive now.
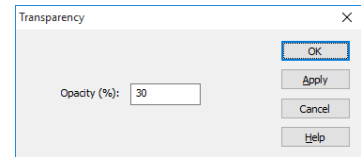
Many of the drawings we do will be on templates which have preloaded effects. This makes it quick and easy to produce nice looking drawings. There will come times, however, when we want to add a sheet to that preloaded template and that new sheet might need effects applied. Let's look at effects and what they do for our drawings.

Effects

We know that CC3+ drawings are divided up into a stack of sheets. On each sheet are CC3+'s drawing entities. For each sheet, we can specify one or more effects to be applied to that sheet. Each sheet is added to the screen in order, but before it is added CC3+ applies any <u>effects</u> we have specified for that sheet. When CC3+ has combined all the sheets into a single image, it applies any effects specified for the **Whole Drawing**.
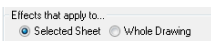
About Units

Note that many of the effects takes their size in units. Most of the effect dialogs which uses this measurement also have an **Effects Unit** selector where you can choose exactly how the term units is interpreted for this specific effects. The default in most cases is map units.

Global Sun

Several of the effects that involve lighting will allow you to use the <u>global sun</u>, or to set the light source properties manually. By using the global sun, you will ensure that all effects use the same lighting value, and you can easily change all the lighting by changing a single value.

To access the Global Sun, right click the **Sheets and Effects** button. The global sun is used for several different purposes, so not everything in this dialog will be useful for all effects. Use **Azimuth** to set the horizontal angle of the sun, and **Inclination** to set the vertical angle. **Intensity** controls the strength of the light.
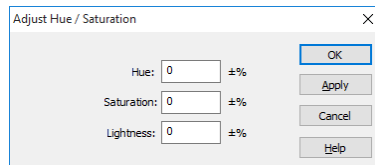

Adjust Hue/Saturation

Hue, Saturation, Lightness (HSL) is way of representing colors. This effect adjusts the hue, saturation and lightness values of every pixel.

Hue is the angle of the color and the <u>color wheel</u>.

Saturation is the intensity of a specific hue. A highly saturated hue has a vivid, color, while a less saturated hue appears more grey.
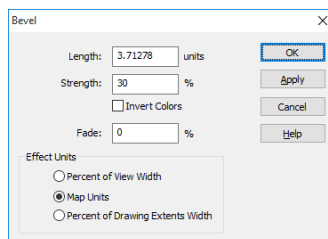
Lightness is the perceived amount of light in color. A high value tends towards white, and a low one towards black. This effect is usually applied to an entire drawing rather than on a single sheet.

Bevel

Bevel gives and illusion of depth to edges. It adds a dark area to edges facing the lower left corner of the screen and a light area to edges facing the top left corner of the screen. The edge of the bevel can be faded to appear curved, and the color of the bevel inverted to invert the 3D effect. Although the tops of real walls are not usually beveled, a bevel in a drawing shows that the wall is 3D, and can look very nice. Cylindrical objects also benefit from long, fading bevels.

Effects

Each Sheet in the drawing can have several effects. The effects settings are saved with the drawing.

Global Sun

Overland maps usually doesn't use everything the global sun has to offer, most of the options in this dialog is mainly used with the City Designer 3 addon.

Color Wheel

A color wheel is an organization of color hues around a circle which shows the relationships between colors considered to be primary colors, secondary colors, complementary colors, etc.
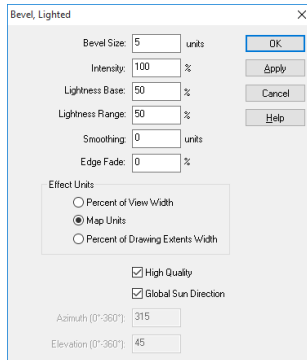
Parameters

Length is the length of the bevel in units.

For **Strength**, increase this value to decrease the transparency of the bevel. Increasing the number makes the light and shadow appear bolder.

If **Invert Colors** is checked, it makes the area appear sunken instead of raised.

For **Fade**, increasing values cause stronger fading of the bevel towards the inside of the edge. The higher the number, the more rounded is the appearance.

Bevel, Lighted

This effect is essentially the same as **Bevel** with the added ability to change the direction of the light source.

Parameters

Bevel Size is width of the bevel in units.

Intensity is the amount that the base colors show through the bevel.

Lightness Base refers to the final bevel color which is computed as Sheet Color. Lowering this value will control the overall darkness of the bevel.

Lightness Range controls the range of the final bevel result. Making this value smaller will result in less overall bevel effect.

Smoothing is used to remove artifacts from the bevel. Applying a **Smoothing** value of **2** will generally smooth out these artifacts, but will round out corners in the bevel slightly.

For **Edge Fade**, higher values cause stronger fading of the bevel towards the inside of the edge.

Check the box for **Global Sun Direction** to use the global sun direction setting rather than **Azimuth** and **Elevation**.

Azimuth (0-360) is the horizontal angle of the sun in degrees measured counterclockwise from east. This takes effect only if **Global Sun Direction** is unchecked.

Elevation (0-360) is the vertical angle of the sun in degrees measured counterclockwise from east. Like **Azimuth Light**, this takes effect only if **Use Global Sun** is unchecked.

Blend Mode
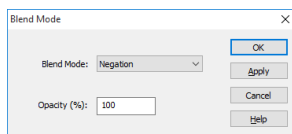
Blend mode is used to blend entities on the current sheet with those on the sheets below this one in the drawing order. You can use this to alter the coloration of part of the below map, like placing a circle with inverted or darkened colors.

Blend Mode: Select one of the available blend modes. Normal will result in no blending, but all the other options will mix the colors of the current sheet with those of the below ones.

Opacity: This controls the transparency of the effect. 100% opacity means no transparency, and results in the strongest mix, while increasing transparency will make the contribution from the lower sheets less.
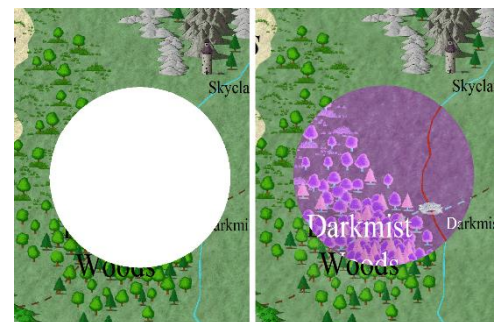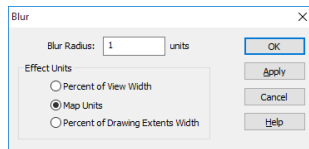
Blur

Blurring softens and removes noise, as well as smoothing out hard edges between filled areas. This effect is frequently used for backgrounds, water and contours to blend areas of color and fill styles. When blur is used on the entire drawing, it can soften it. A blur of .01 on text might be just enough to antialias it.
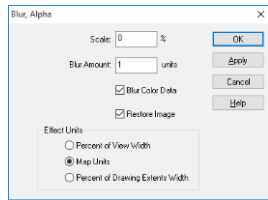
Parameters

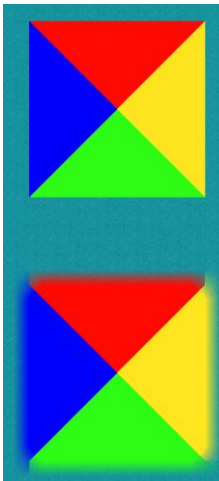The **Blur radius** is the distance around each blurred pixel which is taken into account. The larger this value, the slower the blur effect.

Blur

Blur is one of the slowest effects. A lot of blurs in the drawing will slow redraw time considerably.

Blur, Alpha

Alpha Blur uses the color information in the entity to create a glow around the entity. The entire outer edge of the entity is affected, blurring an area of equal area inside and outside the entity border.

This has several advantages over the regular glow effect, as Blur, Alpha can create different glow colors for different entities on the same sheet. Note that this effect is quite resource intensive, so it should not be turned on while still working on the map
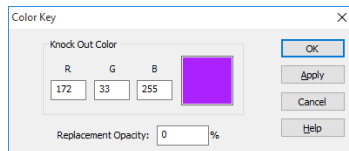
Parameters

Scale is the strength of the effect. Lower values gives a less pronounced, highly transparent glow, while a high value gives a very visible opaque glow.

Blur is the size of the glow, in units. The larger the value, the further from the entity the effect will be visible.

Blur Color Data mixes the glow effect with the underlying image it was created from. This causes the glow to look like a semi-transparent effect on top of the original entity.

Restore Image places a copy of the original image on top of the effect. Using this option causes the inside glow on the entity to be hidden, and only the glow around the original image will be visible.

Bump Map

A bump map is a grayscale image that represents height data. These heights are used to compute a normal map which is used as described above. If you don't have a handy normal map, using a grayscale image as a bump map will often work well.

Color Key

This effect can make fully or partially transparent any specific color on a sheet. This is commonly used along with a green screen when making videos to put characters into a location filmed separately, but is very helpful in all instances when you wish to insert anything into another image. This effect can also be used to knock out parts of another entity.

Knock out Color is the color you wish to affect.

Replacement Opacity is the transparency you want on the affected color. A value of **0** means that it will be invisible, while a value of **100** will negate this entire effect.
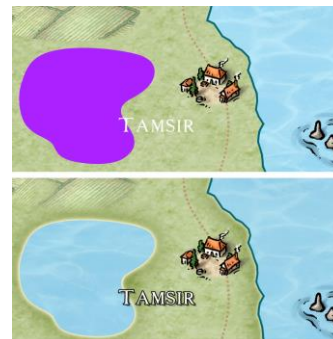
Displace

Displacement

The displace filter works by using a displacement map to compute the new pixel to use at the current location.

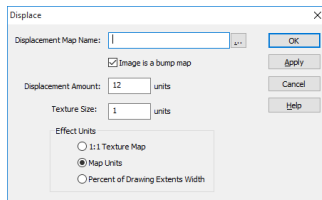This effect distorts pixels based on another sample image. Displace can be used to age or erode the edge of walls or contours.

Parameters

**Displacement Map Name** is the filename of the raster file to use.

Horizontal Displacement

Positive values here will displace the shadow to the left of the entities. Enter a negative value for the shadow to be displaced to the right of the entities.

Image is a bump map will indicate that the image is a bump map. If unchecked, this item indicates that the item is a normal map.

Displacement Amount is the size to scale the vector by. A displacement of 1 moves things 1 unit, 2 moves them 2 units, etc.

Texture size is the size of a tile in units.

Drop Shadow

Vertical Displacement

Positive values here will displace the shadow above the entities. Enter a negative value for the shadow to be displaced below the entities.
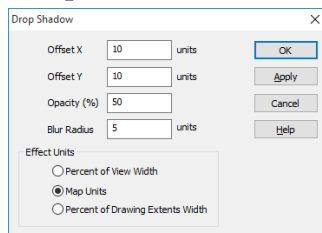
Drop Shadow gives the impression that entities are floating over the background by adding a shadow. This effect is primarily used with text and cartouches to make them stand off the background.
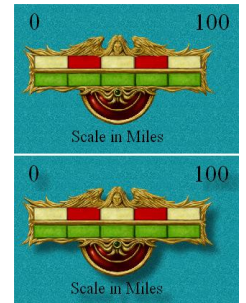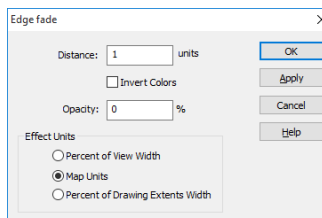
Parameters

Offset X is the horizontal displacement in units.

Offset Y is the vertical displacement in units.

For **Opacity**, 0% is totally transparent (no effect).

**Blur radius** softens the edge of the shadow.

Edge Fade

Edge fade finds solid-filled areas on the current sheet and fades them to or from the edge. It has no effect on entities with non-solid fill styles. This effect is ideal for political borders in a map made up of solid-filled regions.

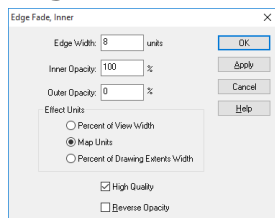### Parameters

Distance is the width of the fading area.

If **Invert Colors** is unchecked it fades towards the interior, otherwise it fades towards the edge.

Opacity refers to the opacity of the non-faded area.
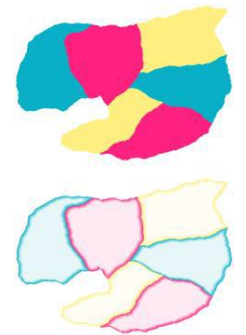
Edge Fade, Inner

This effect is similar to **Edge Fade**, but with the added ability to fade toward the middle or fade toward the edge of the solid areas.
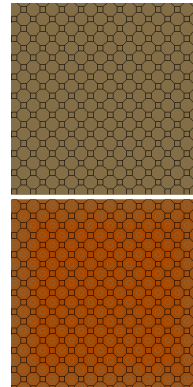
Parameters
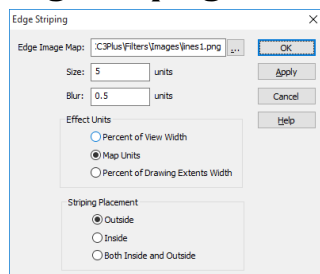
Edge Width is the width of the effect in map units.

Inner Opacity is the opacity of the middle of the solid area.

Outer Opacity is the opacity of the edges of the solid area.

Edge Striping

Edge striping takes a raster image and repeats it around entities on the effected sheet, such as a wall or coastline.

Parameters

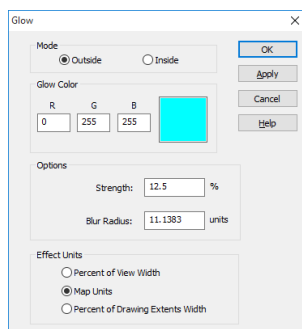**Edge Image Map** is the image to be striped along the edges.

Size is how far from the edge the effect will extend out to. Do note that the entire width of the image will be used, so the image will be stretched to fit.

Blur allows you to add a blur effect to the striping

Striping Placement indicates if the striping should be on the outside or inside of the edges.
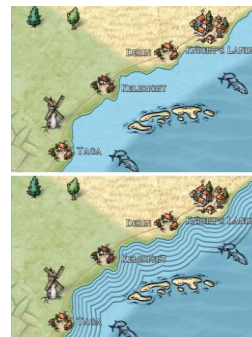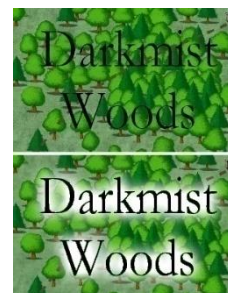
Glow

This effect adds a color halo around the affected sheet. **Glow** can be used to offset text or symbols from the background, or do an outline outside a wall or landmass. The glow will make a copy of the entity in the selected color. This is then blurred. Positive values here will displace the shadow to the left of the entities.

Mode gives us the choice of **Inside** for the glow to be in the interior of the shape or **Outside** to be outside the shape.

Value

Color values are numbers between 0 and 255

In **Glow Color**, click the colored area to choose a color from the palette, or type an RGB value.

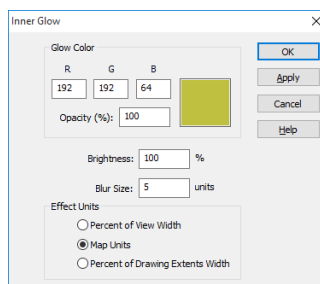**Strength** adjusts the density of the glow. **0** gives a minor effect.

Blur Radius sets the width of the glow.

Inner Glow

This effect creates a glow inside an entity which is less graduated than **Glow**.
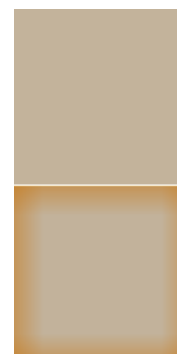
Parameters

Blur Size sets blur width.

Input into **R**, **G**, and **B** the RGB values of the glow color or click the color swatch to pick a color from the palette.

Set **Opacity** between 0 and 100%.
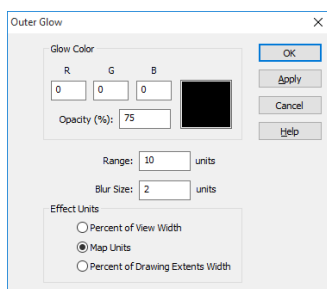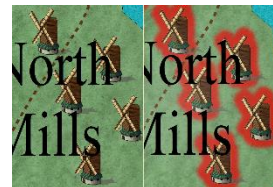
Brightness lightens the glow.

Outer Glow

This effect is similar to Inner Glow, but is applied to the outside of an entity instead of the inside.
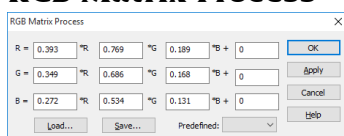
Parameters

Blur Size sets blur width.

Input into **R**, **G**, and **B** the RGB values of the glow color or click the color swatch to pick a color from the palette.

Set **Opacity** between 0 and 100%.

Range controls the size of the glow.

RGB Matrix Process

This effect adjusts the color of the pixels in the affected region. It gives you a linear combination of the input RGB color components. This technique lets you perform color conversions such as sepia tone, grayscale, pure red, pure blue, pure green, and so on. There are many possible combinations of operations, but the important idea is that it's one pixel in, one pixel out. You can also use this filter to darken or lighten an image. The predefined values are commonly used to make the whole drawing greyscale, or sepia.
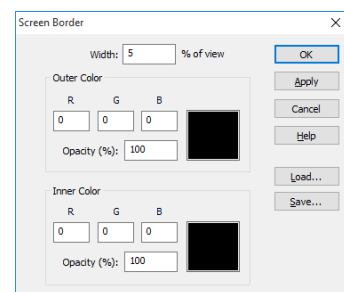
Parameters

The drop list for **Predefined** on the bottom of the **RGB Matrix Data Entry** dialog has a number of presets, including sepia.

Load loads a saved setting.

Save saves the current setting.

Screen Border

CC3+ can't calculate certain effects — for example, a drop shadow — from something off the active window. To make sure maps look fine in your drawing window and prints, you can add an opaque border to the active window. If you are printing a particular view of a map, and you can see an edge effect you don't like, use an opaque white solid sufficiently big to cover the problem up. You can also use it to give a fake 3D button to the edge of your screen by having the border opaque at the outside fading to transparent on the inner edge.

Parameters

Width is the width of the border as a percentage of the screen width.

Outer Color is the color of the outside of the border.

Outer Opacity is the opacity of the outside of the screen border.
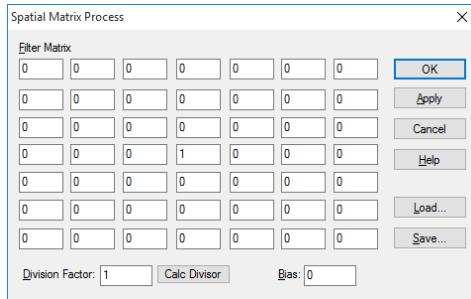
Inner Color is the color of the inside of the border.

Inner Opacity is the opacity of the inside of the screen border.

For **Load** and **Save**, you can save the current screen border and add existing ones.

Spatial Matrix Process (SMP)

This allows you to define a multitude of different effects; blurs, displacements, edge effects, embossing and brightness/darkness. This effect has a wide variety of uses, usually as a whole drawing filter. There are a number of saved settings, and it is likely you will want to use these. SMP works on a pixel basis, so its effects will vary with zoom levels. Most users will be content with preset values, or slight modifications of them.

Parameters

**Load** and **Save** lets you load saved settings and save the current setting.

Filter matrix values represent the effect surrounding pixels have on the current pixel. They can be any integer value.

Each value in the filter matrix is divided by the **Division Factor** before being applied to a pixel.

Unless you want an effect which darkens or lightens the image, you should click **Calc Divisor**.

Bias shifts the value of each pixel for use in emboss effects.

Texture Overblend
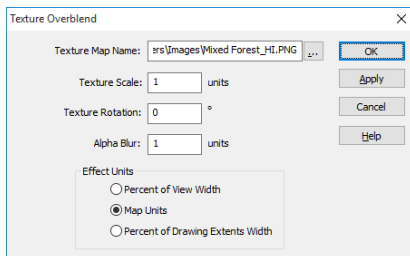
Texture Overblend replaces filled areas with a selected tileable texture, and fades that texture towards its edge. This is useful for background areas filled with different fill styles, for example grass contours. Each type of grass contour would be on a different sheet, with the **Texture Overblend** file pointing at the correct bitmap tile.

Texture
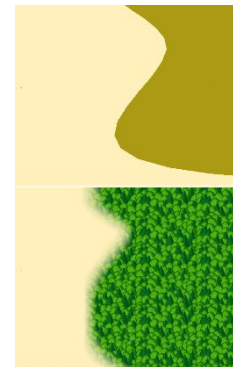
If you have Paint Shop Pro® on your system, you will find many suitable texture files there, as well as online.

Parameters

In **Texture Map Name**, select any tileable png or bitmap file, for example from your bitmaps\tiles folder.

Texture Scale sets each tile to be this size in units.

Texture Rotation allows you to rotate the texture used, for example to give some variation if you use the same texture multiple times, or to match the angle of your entities.

**Alpha Blur** adds a blur to the edge of the area.

Texturize

This effect adds a semi-transparent pseudo-3D texture to the affected area. This can be used, for example, for adding a paper weave to a whole map or adding textures to sold filled areas for interest.

Parameters

Intensity is the strength of the effect.

Brightness controls the brightness of the texturized surface.
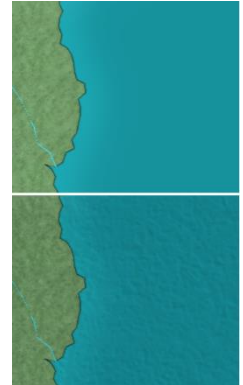
Size sets the size in units for each tile.

Texture Map Name lets us select a tileable texture.

If you check **Global Sun**, lighting will be calculated based on the Global Sun parameters, or you can uncheck it to specify Azimuth and Elevation yourself.

Sun Azimuth is the angle from above at which the texture is lit.

Sun Elevation is the angle around screen from which the texture is lit.

Transparency

Transparency lets us change the opacity of entities on the sheet. This effect allows us to see through entities. For example, add to a grid overlay to make it less intrusive, or add to shallow water sheets to show what is underneath. With **Transparency**, we can make ghosts and oozes or we can show what is underneath a forest.
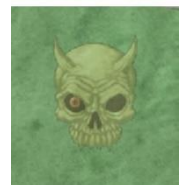
Parameters

With **Opacity** set to **0**, the entities are fully transparent. When set to **100**, they are fully opaque.

Wall Shadow

This effect adds a shadow to all appropriate edges which looks as if it has been cast from a vertical surface. This is different from **Drop Shadow** in that **Wall Shadow** gives the illusion that the entity is sitting on the ground rather than hovering above it. This is specifically designed for use with walls, although it works pretty well on symbols sheets, too.

Parameters

Length is the length of the shadow.

Opacity sets the transparency or opacity from 0% (transparent) to 100% (solid).

Blur Radius is the length of the blur at the edge of the shadow. For a sharp edge on the shadow use a value of **0**.

Wall Shadow, Directional

This effect is the same as **Wall Shadow** with the addition of allowing us to specify from which direction our light source is coming.

Parameters

Length is the length of the shadow.

Opacity sets the transparency or opacity from 0% (transparent) to 100% (solid).

Blur Radius is the length of the blur at the edge of the shadow. For a sharp edge on the shadow use a value of **0**.
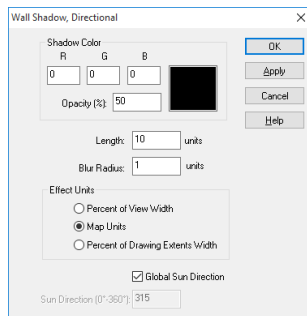
Check **Use Global Sun Direction** to use the Global Sun direction.

Sun Direction (0-360) sets the lighting direction measured in degrees of rotation around the circle.

Floorplan Lighting

Floorplan lighting effects are used along with the Dungeon Designer 3 addon. Lighting allows us to define light sources that cast light in our map. Areas without light sources will be dark. See the documentation for the DD3 addon for more details on how to add lights to your floorplan map.
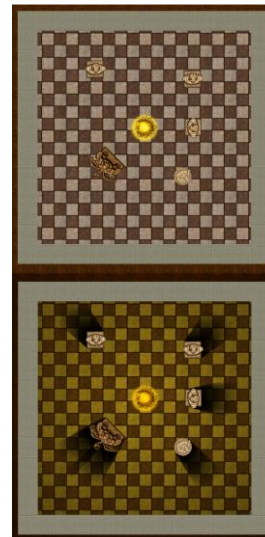
Wall Shadow, Point Light Finalize
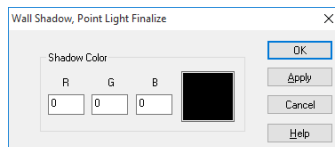
This effect is a special effect for use with **floorplan lighting**. Adding this effect to a sheet tells CC3+ that this is the last sheet effected by lighting. Sheets after this sheet in the list will show their entities normally, not affected by light sources.

Shadow Color is the color of the shadow entities will cast.

Wall Shadow, Point Light Setup

As with the Finalize effect above, this effect is used with floorplan lighting. Add this effect to the any sheet that should generate shadows from the light sources. This will cause all entities on the sheet cast shadows from nearby light effects Note that if no light sources exist, these sheets will be completely black.

Parameters

Shadow Length is the length of the shadows cast by entities. Shadows will fade out when they reach this length. A value of **0** will cause the shadows to be cast across the whole drawing

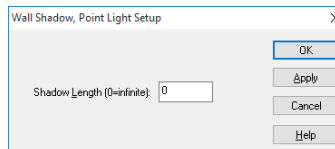**Shadow Color** is the color of the shadows cast by the entities.

Slow CC3+ Down

Effects have been optimized compared with CC3, and you should be able to work on your drawing with effects on. If you find that redraws take too much time, you'll want to turn effects off while working however.

Editing drawings with effects on can be tricky, however. For example, it is hard to select the edge of a blurred contour line.

Working with Effects

Effects slow CC3+ down. Each time we change the view, CC3+ must recalculate the effects for the current resolution. This allows effects to be very flexible and not limited in resolution, but it means more work for your computer. CC3+ is more efficient than CC3 in this regard, so feel free to work with effects turned on all the time, but if you finds that this slows down your work process, you may consider this workflow instead:

- Add sufficient entities to the map that it is at least 50% finished.

- Click **Sheets and Effects**, and then check **Activate Sheet Effects**.

- Add suitable effects to each sheet. Check that you like the results after each effect.

- Finish with **Whole Drawing** effects if you want them.

- Repeat this until you are happy with the effects on the map.

- Turn effects off until you are ready to print or export the drawing.

Effects Speed Tips

To speed things up when working on effects, try one or more of these tips:

- Hide sheets you don't need to see for the effect you are currently working on.

- Turn off individual effects you don't currently need to see.

- Blur, or any effect with a blur in is very slow. Add these last, and keep them turn off as much as possible.

- Resize the viewing window to make it much smaller while you are working on effects.

Sheets and Effects Review

- Symbols or entities placed with draw tools are placed on an appropriate sheet such as Sea/Coast or Terrain. Entities added using draw buttons are placed on the current sheet.

- Sheets force entity order, and can be hidden or shown in the drawing.

- Effects slow down the redraw time of drawing. Turn effects off while working with the drawing and then turn them on for presentation or printing.

- When working with effects, hide sheets you don't need to see to speed up redraws.

Italian Hill Town

based on Panicale, 14th century

01 Eastern Town Gate
02 Western Town Gate
03 Piazza
04 Fountain
05 Church
06 Monastery
07 Chapel
08 Mill
09 Town Hall
10 Vineyards and Olive Gardens
11 Palazzo

Italian Hill Town

This drawing was created in **CC3** with the **Perspectives Pro™** add-on by **Ralf Schemmann**. Ralf created the drawing using techniques explained in **Issue05-Panicale City** of **The Cartographer's Annual 2007**.

This style is available with the Perspectives 3 addon.

SYMBOLS AND SYMBOL MANAGEMENT

CC3+ symbols are a group of entities that are bundled together as a single entity to represent objects in our drawings such as trees, mountains, buildings, furniture, etc. Aside from being little graphical representations of drawing objects, some symbols have certain attributes that dictate how they will act and what functions they will perform. They are made available for use in the drawing in collections called catalogs.
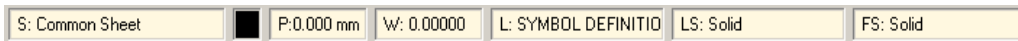
Symbols

In order to understand what symbols are, we have to understand the difference between a symbol definition and a symbol reference. To use symbols, we create a symbol definition that CC3+ stores in an invisible section of the current drawing file. Once the definition is stored, we insert images of the symbol, called symbol references, throughout the drawing. It is the symbol reference that we see when we look at a drawing. The definition for that symbol is stored in the drawing and is not visible. Because each reference is only an image of its symbol definition, we can add hundreds of symbols without excessive memory usage.

Creating a Symbol Definition

A symbol definition, in its simplest form, is an entity or entities that are bundled together into a package and identified as a symbol. To create a definition, we create, in essence, a drawing that we then store in a catalog. Let's create a simple definition, save it to a catalog and then use it in a drawing. To begin, we'll open a blank catalog template.

1. Click **New** . The **New Drawing Wizard** opens.

2. In **Map Type**, select **Symbol Catalogs**. Click to select **Decide settings myself**. Click **Next**.

3. In **Map Style**, select **Blank Overland Catalog**. Click **Next**.

4. Accept the dimensions by clicking **Next**.

5. Accept the map background settings by clicking **Finish**.

6. In the **Save your new map** dialog, type in a file name, then click **Save**.

7. Set the Status bar to match this:

| S: Common Sheet | ■ | P:0.000 mm | W: 0.00000 | L: SYMBOL DEFINITIO | LS: Solid | FS: Solid |

8. Click **Box** . Type **0,0** then hit [ENTER]. Type **1,1** then hit [ENTER].

9. Click **Zoom Extents** .

10. On the color bar, click color 15 (white).

11. Click **Box** . Type **0.1,0.1** then hit [ENTER]. Type **0.9,0.9** then hit [ENTER].

We're created a very simple marker that we can now define as a symbol.

12. From the **Symbols** menu, select **Define Symbol**. Select both entities we drew then right click. Select **Do It**. In the **Define New Symbol** dialog, set **Bounding entity** to none and set **Origin** to **Middle,Center**.

13. In the **Name** field, type in a **prefix and name**, then click **OK**.

You will notice that the entities we drew are now gone from your **View Window**. That's okay. When we defined those entities as a symbol, they were removed from the **View Window** and placed in the **Symbol Manager**.

14. From the **Symbols menu**, select **Symbol Manager**. Click on the symbol to highlight it, then click **Save as Catalog**. Type in a name for your **catalog**. For simplicity's sake, I named the catalog UG Box. Click **Save**.
   Our symbol is now defined and ready to use in a drawing. Let's use it.
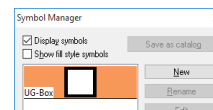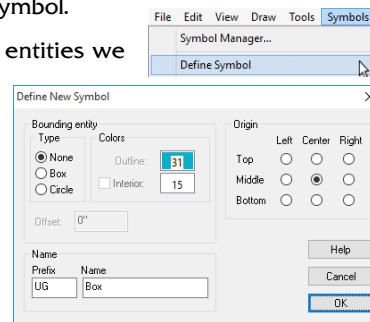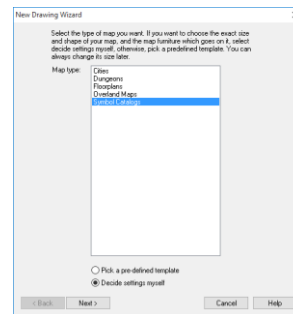
Blank Catalog Template

We're creating the symbol definition in a blank template so there are no extraneous entities in our symbol. Everything that is in the template will get saved in the symbol definition. Ordinary templates have fill styles and other such niceties saved in them which make creating maps easier, but these saved niceties are extraneous entities in our symbol. Note also that the View Window color is orange in the catalog. Symbol catalogs are distinguished from ordinary drawing templates by a different colored View Window — usually orange or dark green.

Prefix and Name

The prefix will be a part of the symbol's name. In this case, I used UG and Box as the prefix and name. You can use your initials for the prefix or use a word or acronym to indicate the style of symbols in the catalog. Be aware that all symbol definitions in a drawing must have unique names so avoid plain naming conventions that might be duplicated between catalogs.

Catalog

This is a very simple catalog consisting of a single symbol. If you were creating a whole set of symbols, you could draw all the symbols in the View Window and once they were all drawn, you'd then define them one at a time. With the whole catalog defined, you'd then select all symbols in the Symbol Manager and save the catalog.

15. Click **Open** 📂 then navigate to the **Tutorials/UserManual** folder. In the **Files of Type** drop down menu, select **CC3/CC2 FCW Drawing**. Select **Piadra_Gate.FCW**, then click **Open**. When CC3 asks you if you want to <u>save changes</u> to the existing drawing, you can click **Yes**.

16. Click **Symbol Catalog** [icon] then navigate to the folder in which you saved your catalog. Select the catalog that was created out of our exercise, then click **Open**.
The symbol we created is now in the **Symbol Display** column and ready to use.

17. Click to select the symbol and then place it in the map adjacent to the label Aldenthorpe Ferry.
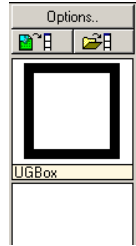
From Definition Creation to Reference

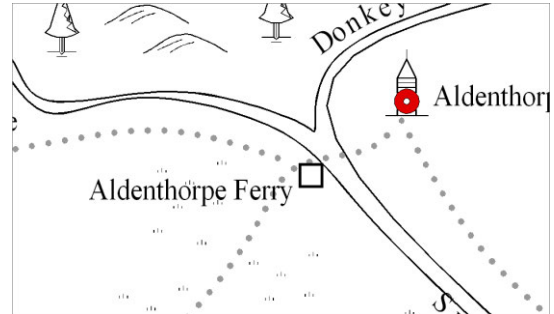Let's recap the exercise we just did. First, we created the symbol definition and saved it to a catalog. Then we <u>added the definition</u> to the current drawing by clicking on the symbol from the **Symbol Display** window. The last step we did was to add the symbol reference to the drawing by placing the symbol into the map.

Importing PNGs as Symbols

CC3+ allows us to import <u>raster artwork</u> and use them as <u>symbols</u> in our drawings. The raster files you wish to use for a particular catalog or drawing need to be in a folder, preferably under the <u>CC3+ data folder</u>.
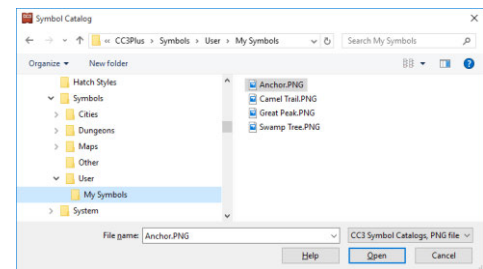
Importing PNGs from a Folder

We don't have to create catalogs to import PNGs and use them as symbols in our drawings. We can simply open the folder and use them.

1. Click **Symbol Catalog** [icon].

2. In the **Symbol Catalog** dialog, browse to the folder in which the images are stored. In this example, we've created a folder called **My Symbols** in the **Symbols/User** folder.

Open the folder, then select any of the images stored there, then click **Open**.

CC3+ will display in the Symbol Display window a thumbnail for each of the images in that folder. They can now be added to the drawing.

Importing PNGs into a Catalog

By importing PNGs into a catalog, we have more control over options like resolution and symbol origin. Follow the same guidelines as far as creating a folder to hold the images and be mindful of adhering to proper naming conventions for the files.

1. In the **Symbol** menu, select **Import pngs...**.

2. Input the appropriate settings for the **Import bitmap files as symbol catalog** dialog.
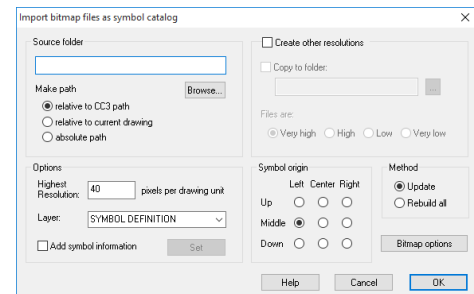
Source folder

Click **Browse** to find the folder in which the bitmap files reside. Select the appropriate <u>path</u>.

Options

The **resolution** of the image is the number of pixels divided by the real-world width. This setting can be changed after the definition is created, so don't stress over it. For overland symbols at the same scale as the ProFantasy ones, use 20.

Select the layer on which you wish the images in the symbols to appear. This is usually the **SYMBOL DEFINITION** layer.

If you want to add **symbol options**, tick this box and then click **Set** to open the **Smart Symbol Options** dialog. You can always change individual settings in the **Symbol Manager** when import is complete.

Create other resolutions

We can create lower **resolution files** that CC3+ can use to speed up redraws. The **Files are:** selection lets CC3+ know what resolution the imported files are - usually Very High (full resolution) or High (often the case with artwork from other software). Choose the folder you created prior to step one as the output folder.

Symbol Origin

The symbol's **origin** can be simply thought of as its 'holding' point. It is the point which is held by the cursor when placing the symbol. This is the point which will snap to the grid if **Snap** is turned on.

Method

Method allows us to update an existing symbol catalog with just the new or changed PNGs or we can rebuild the whole catalog.

Bitmap Options

Clicking **Bitmap Options** opens the **Bitmap Options** dialog. In this dialog, the transparency of the images to be imported is set. Usually, **Alpha transparency** is set. This sets the transparency according to alpha channel values. Select **Opaque** if you don't want any pixels in the images to be transparent. When **Transparent upper-left color** is selected, the color equal to the pixel in the upper left corner of the images is set as transparent. When **Transparent RBG** color is selected, the transparent color equal to a specific RGB value is set.
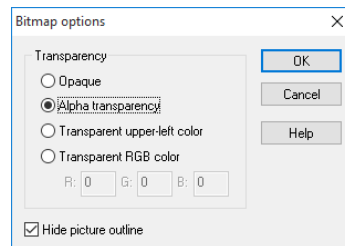
Uncheck **Hide picture outline** if you want an outline on the images.

   3. Click **OK**.

The images are now defined as symbols in the **Symbol Manager**. They can be saved as a catalog, or used in the current drawing by clicking **Symbols in Drawing** [icon].

Symbol Options

The symbol we have available to use and those we create can have many functions and features that make it easier to manage them or easier to place and use them in our drawings. Now that we've explored what symbols are, let's look at the options available for them.

From the **Symbols** menu, select **Symbol Options**....
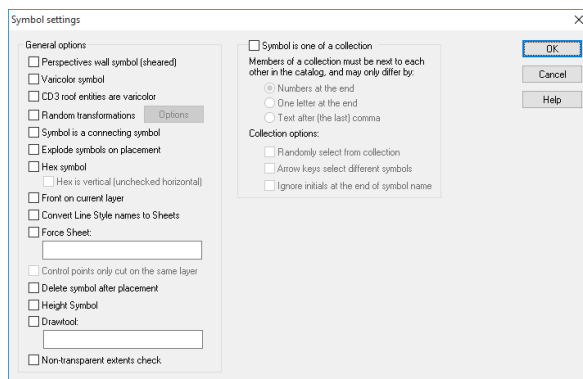
Path

Select Relative to CC3 path if the folder holding the images is in your CC3+ data folder. Select Relative to current drawing if the folder holding the images is stored in the same folder as the FCW in which they are used. Select Absolute path if the folder holding the images is separate from both the CC3+ data folder and the FCW file.

Resolution

For example, if the image is 100x100 pixels and the intended symbol will be of a Dungeon object that is 5' across, then the resolution will be 20 (100/5 = 20). In this case, 20 pixels equals 1 foot in the drawing.

Symbol Options

Symbol Options lets us define many of the behavior options for symbols. For example, this is where we set the symbol as a member of a collection, as well as which sheet the symbol belongs on.

Lower Resolution Files

CC3+ will open another program in the background while other resolution files are created. When this process occurs, it may take some time to complete.

Origin

For overland symbols, the origin is usually center down; and for floorplan symbols, it is middle left.

Symbol is one of a collection

Symbols put into a collection will be grouped together in expandable clusters in the **Symbol Display** window. Symbols in a collection are designated by a + in the upper left corner of the display thumbnail. The other settings control how the symbols are organized and selected from the collection.

If **Numbers at the end** is bulleted, the symbol is one of a consecutive series which is numbered. For example, symbols names would be Tree 01, Tree 02, Tree 03, etc.

If **Letters at the end** is bulleted, the symbol is one of a consecutive series which ends in <u>a letter</u>.

With the **Randomly select from a collection** option checked, symbols will be randomly selected out of the collection during placement. This feature works well, for example, for placing different trees to make more visually interesting forest without having to scroll through the catalog and manually select each different tree symbol.

In this example, these trees are in a collection. The row seen here is the result of consecutive clicks of the mouse.

With the **Arrow keys select different symbols** option checked, symbols from a collection can be selected by scrolling through them using the arrow keys. This feature works well for selecting symbols out of Perspectives Pro symbol catalogs or when the next symbol randomly selected is not to your liking and you want to scroll passed it.

If **Ignore initials at the end of a symbol name** is checked, the collection will ignore a series of letters at the end of the symbol name.

General Options

The **Perspectives wall symbol (sheared)** option is only set for Perspectives Pro wall symbols. It causes them to shear (distort) when they align to a wall so they align correctly in the 3D-like isometric view.

In this example, the door symbol is a Perspectives wall symbol. When the symbol finds a wall entity, it distorts to match the angle of the wall and so aligns correctly for placement.
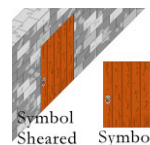
A **Varicolor symbol** has a shaded varicolor scheme based on the color set as current on the Status bar. Check this box to let CC3+ know it is a varicolor symbol. Varicolor symbols have a small color box in the upper right corner of the display thumbnail. For more information on varicolor symbols, see the help files.

Symbols set with **Random Transformations** selected and the **Random Transformations Options** entered will place consecutively with random offset, rotate, scale, mirror or sheer properties. Symbols with a random transformation option will have a small R in the top right of their thumbnail in the symbol catalog window.

In this example, this tree symbol has its scale set for random transformation. On consecutive placements, the symbol scales randomly within the scale parameters of .9 and 1.1. This helps avoid the dull uniformity that can arise when all the trees in the drawing are exactly the same size.

With **Symbol is a connecting symbol** checked, the symbols will allow you to drag them along in a path. By using specifically constructed symbol catalogs, symbols can be placed in straight or curving patterns to create walls, rooms and corridors as easily as drawing a path. When a symbol is designated as a connecting symbol, there is a small c in the upper right corner of the display thumbnail. For more information on Connecting Symbols, see the help files.
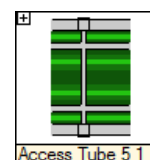
When symbols have **Explode symbols on placement** checked, they will automatically be <u>exploded on placement</u>.

A Letter

This is generally used for free-standing Perspectives Pro symbols. The letters at the end are compass directions--N, S, E, and W. Perspectives Pro is a CC3+ add-on which allows users to create drawings in an isometric view.

Explode on Placement

When exploded in a drawing, a symbol ceases to be a symbol. In the drawing, it is broken into its individual entities.

Checking the **Hex Symbol** option allows easy placement in a hex grid.

If **Front on current layer** is checked, the symbol will be placed in front of the top most entity on the current layer, but below any entities which appear later in the drawing.

When **Convert Line Style names to Sheets** is checked, upon placement in a drawing, the symbol will broken into its different entities and those entities will be applied to different sheets in the drawing according to the **Line Style** names. This option is useful when making symbols that you wish to break into separate sheets to have different effects applied to its various parts.

In this example, the mountain symbols on the left have their fill color and the black outline entities separated onto different sheets based on their **Line Style** names upon placement in the drawing. The sheet that receives the fill color has a blur effect applied so when Effects are turned on, the symbols look like those on the right. These are called 2 part symbols.
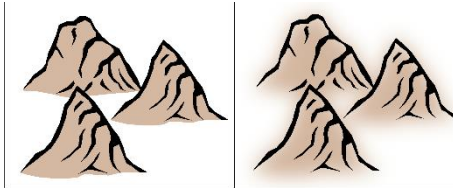
If **Force Sheet** is selected and the sheet designated, the symbol will always go to the specified sheet regardless of what the current sheet is in the drawing.

When **Control points only cut on the same layer** is selected, the **control points** for that symbol will only recognize entities on the layer on which it is applied.

If **Delete symbol after placement** is checked, the symbol will be deleted after it is placed in the drawing.

Symbol Parameters
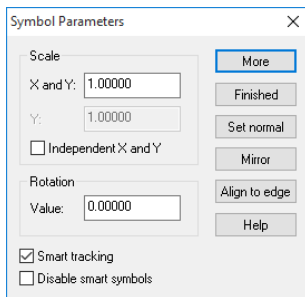
While holding a symbol on the cursor, if we right click, the **Symbol Parameters** dialog will open. This dialog gives us control over both the symbol we are holding and future symbols we'll place in the drawing.

Scale

Scale X and Y shows the current scale value. The usual default value is 1, but the current scale may be something other than 1 if the **drawing properties** set a different default scale value. Change this value to **set the scale** higher or lower.

If **Independent X and Y** is checked, you'll be able to input a different X and Y value.

In this example, the symbol is shown with the default value of 1 and with two independent X and Y samples.
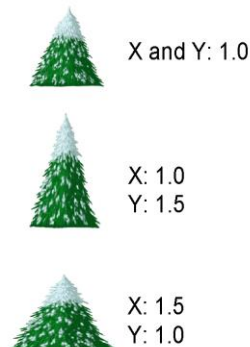
Rotation

The default rotation value is **0**. With a **0** rotation, the symbol will appear in the drawing as it does in the **Symbol Display Window**. Each degree of rotation will turn the symbol counterclockwise.

More

Clicking **More** will save the values and settings in the **Symbol Parameters** dialog, close the dialog, and return to the cursor with the symbol attached and ready to place in the drawing.

Finished

Clicking **Finished** will save the values and settings in the **Symbol Parameters** dialog, the dialog will close, but the cursor will now be empty.

Control Points

Control points are added to regular symbols to create "smart symbols". Smart symbols work intelligently with other straight-edged CC3+ entities in that both the symbol and the entity are aware of each other during insertion. This awareness allows the entity to automatically create cuts to accommodate the symbol, or have the symbol align or scale itself to fit cleanly. Typical uses for smart symbols would be doors and windows aligning and cutting walls. For more information on Smart Symbols, see next page.

Drawing Properties

To see the drawing properties for the current drawing, select Drawing Properties out of the File menu.

Set Scale

Changing this value will change the scale for the symbol currently being held on the cursor as well as all symbols placed after this one. The scale value will remain until it is changed again or reset back to default.
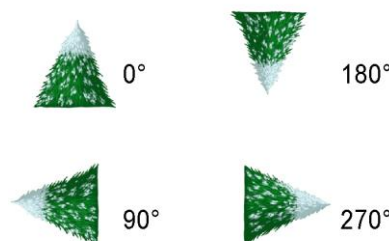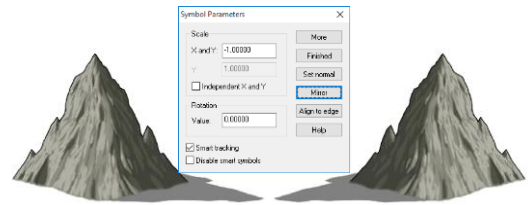
Set Normal

The default values for the **Symbol Parameters** dialog will be restored when **Set Normal** is clicked.
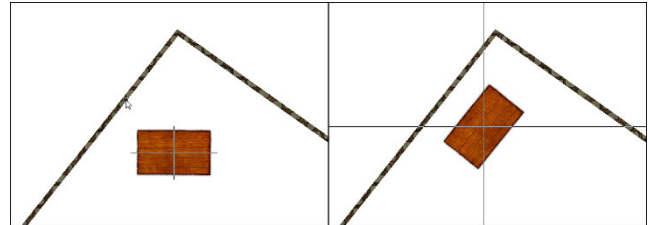
Mirror

If **Mirror** is clicked, the scale value changes to **-1** and the symbol is placed as a mirror image of the original.

In this example, a mirror is placed next to its original for comparison.

Align to edge

When **Align to edge** is clicked, CC3+ asks which edge you wish to align the symbols to and then inputs the appropriate rotation in the **Symbol Parameter** dialog.

Smart Tracking

When this box is checked, the dynamic cursor is enabled with **Smart Symbol** awareness. The symbol cursor will align, cut, or scale according to its defined control points. If this option is off, the control points will still take affect unless the **Disable SmartSym** option is also off. If **Disable SmartSym** is checked, then **Smart Tracking** will be disabled regardless.

Disable Smart Symbols

If this box is checked, control points functionality is turned off. Symbols will not align/cut/scale upon insertion, and **Smart Tracking** is disabled.

Symbol Manager

As we've worked through the various exercises, we've opened the **Symbol Manager** to perform specific functions. There are more functions there that we haven't yet explored. The **Symbol Manager** lets us control all aspects of symbol design and catalog manipulation. It displays all the symbols in the current drawing or symbol catalog. Let's open a symbol catalog in the **Symbol Manager** and look at some of those other **functions**.

1. Click **Open** 📂.

   In the **Files of type** drop down menu, select **CC3/CC2 FSC Symbol catalog**. Browse to the **Tutorials/UserManual** folder, then select **SampleSymbols.FSC**. Click **Open**.

2. From the **Symbols** menu, select **Symbol Manager**.

 Here we have a short catalog of some basic, monochrome symbols. We'll use this sample catalog to look at the different **Symbol Manager** functions.

Display Symbols

With this box checked, the symbols are displayed. If it is unchecked, there will be only a list of the symbols names.
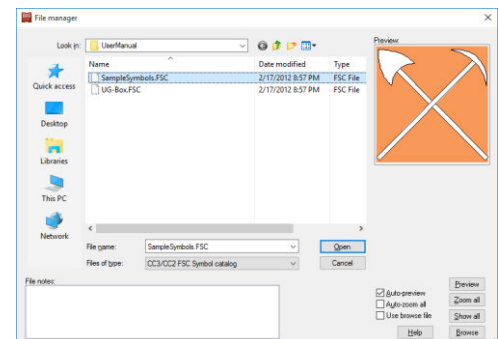
Functions

Some of the Symbol Manager functions work on a selection of symbols, others only on individual symbols. You can select a single symbol in the list by left licking it. Hold down SHIFT and click two symbols to select a range of symbol. Click CTRL and click a symbol to add it or remove it from the selection. To save the selected symbols as a catalog, click Save as Catalog.

Show fill style symbols

If this box is checked, symbols used for **fill styles** in the current template are displayed as well as the catalog symbols.

New

New allows us to open an empty editing window to create a new symbol.

3. Click **New**. In the **Create New Symbol** dialog, type a name for our new symbol. I used SampleCircle as my new symbol name. Click **Ok**. Click in the lower left corner of the **View Window**, then click in the upper right corner of the **View Window**. This will open an editing window.

4. Click color 15 (white) on the color bar.

5. Click **Circle** ⊙. Type **0,0** then hit ⏎ENTER. Type **5,5** then hit ⏎ENTER.

6. Click **Zoom Extents** 🔍.

7. Click **Outline in Black** 🔷 then click to select the white circle we just drew. Right click, then select **Do it**.

8. Click **Copy** ⧉ then right click. Select **Prior** then right click. Select **Do it**. Type **0,0** then hit ⏎ENTER. Type **0,0** again then hit ⏎ENTER. Right click to end the command. This last step **copied** the black outline onto itself.

9. Click **Close** ⊠ on the editing window title bar. Select **Yes** when asked if you want to save the changes.

10. Click **Save** 💾.

11. From the **Symbols** menu, reopen the **Symbol Manager**. Note that our new symbol has been added to the existing catalog.

Rename

Rename allows us to select a symbol and change its name.

12. Click to highlight the circle symbol we just made.

13. Click **Rename**. In the **Rename Symbol** dialog, type in a new name. I renamed SampleCircle and made the new name Marker. Click **OK**.

We'll skip **Edit** for a moment and do **Clone** next.

## Clone

Clone allows us to create a copy of an existing symbol.

14. Click to highlight the circle symbol we made.

15. Click **Clone**. In the **Clone Symbol** dialog, give the clone a different name. I named my cloned symbol Marker 2. Click **OK**.

Edit

Edit allows us to take an existing symbol and open it in the edit window.

16. Click to highlight the circle symbol we cloned.

17. Click **Edit**. Click in the lower left corner of the **View Window**, then click in the upper right corner of the **View Window**. This will open an editing window.

18. Click color 0 (black) on the color bar.

19. Click **Circle** ⊙. Type **0,0** then hit ⏎ENTER. Type **2,2** then hit ⏎ENTER.

20. Click **Close** ⊠ on the editing window title bar. Select **Yes** when asked if you want to save the changes.
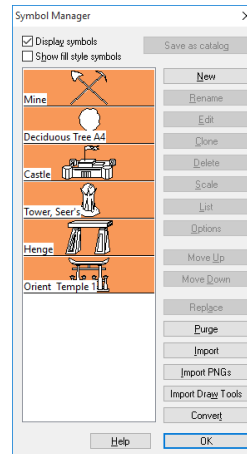
Fill Styles

This catalog was created in the blank template and so no fill style symbols are present. Checking this box in a mapping template will reveal the fill style symbols.
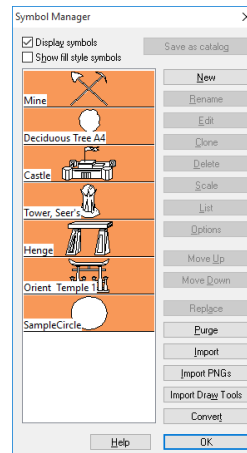
Copied

Why did we copy the outline onto itself? When a symbol is held on the cursor waiting to be placed in the drawing, it is helpful to see an outline of the symbol so that it is easier to place it where we want it in the map. The outer edge of the CC3+ symbol must have an odd number of entities in order to see the symbol while it is held on the curser. If it has an even number of entities, it will be invisible on the cursor and very difficult to place accurately in the drawing. Our white circle plus the black outline would have been invisible on the cursor. Adding the extra outline made 3 entities and so it will be visible while being placed into a drawing.
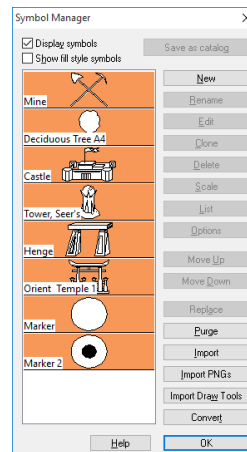
21. Click **Save** 💾.

22. From the **Symbols** menu, reopen the **Symbol Manager**. Note that our cloned and edited symbol is in the existing catalog.

Delete

Delete is self-explanatory. We won't demonstrate it here. To delete a symbol, highlight the symbol you want to erase from the catalog and then click **Delete**. Click **Save** 💾 to save the catalog.

Scale

Scale allows us to resize a symbol in the Symbol Manager. To demonstrate **Scale**, we'll put our two marker symbols into the **View Window**. One was a clone of the other and so we know they are the same size to begin with.

23. Click **OK** to close the **Symbol Manager**.

24. Click **Symbols in Drawing** [icon] then add Marker and Marker2 to the **View Window**. Space them a little apart.

25. From the **Symbols** menu, reopen the **Symbol Manager**.

26. Click to highlight the Marker symbol, then click **Scale**. In the **Scale Symbol** dialog, type **2**, then click **OK**.

27. Click **OK** to close the **Symbol Manager**.

28. Click **Save** 💾 to save the catalog.

29. Click **Zoom Extents** 🔍 if necessary to see the newly scaled symbol.

The marker symbol is resized in the **View Window**. Because the definition was resized, any and all instances of that symbol in the drawing will reflect that new scale.

List

List reveals the entities that are in the selected symbol definition.

30. From the **Symbols** menu, select **Symbol Manager**.

31. Click to select the Marker symbol, then click **List**.

If you'd like to print or save the **List symbol** text, click [T] then select **Print** or select **Save As**.

32. Click **Close** [×] to close **List symbol**.

```
T  List symbol
     Name:   Marker
     Low extents:  -14.14214,-14.14214,0.00000
     High extents: 14.14214,14.14214,0.00000
2D Circle: color 15 (white) layer 267 (SYMBOL DEFINITION)
     line style 0 (Solid) fill style 1 (Solid)
     line width 0.00000 tag # 9785 pen 0.000 mm 2nd color 15
     center at 0.00000,0.00000, radius 14.14214
     area 628.31854, circumference 88.85766
     diameter 28.28427
2D Circle: color 0 (black) layer 267 (SYMBOL DEFINITION)
     line style 0 (Solid) fill style 0 (Hollow)
     line width 0.00000 tag # 9786 pen 0.000 mm 2nd color 0
     center at 0.00000,0.00000, radius 14.14214
     area 628.31854, circumference 88.85766
     diameter 28.28427
2D Circle: color 0 (black) layer 267 (SYMBOL DEFINITION)
     line style 0 (Solid) fill style 0 (Hollow)
     line width 0.00000 tag # 9787 pen 0.000 mm 2nd color 0
     center at 0.00000,0.00000, radius 14.14214
     area 628.31854, circumference 88.85766
     diameter 28.28427
```

Options

Options lets you **edit** the smart symbol settings for the currently selected symbol or symbols.

Move Up and Move Down

Move Up and **Move Down** are self-explanatory. These functions change the order in which symbol definitions are displayed in the catalog window. Click **Save** 💾 to save the catalog after reordering the symbols.

Replace

Replace swaps out all instances of one symbol reference in the drawing with another. It does not affect symbol definitions.

In the **Symbol Manager**, click to highlight the symbol you want to replace, then click **Replace**. In the **Replace symbol references** dialog, click on the symbol you want to replace the old one, then click **OK**.


Edit

If you select Options, and more than one symbol, then options which are different between different symbols will be grayed out. Click the Set button next to any option and change options which you want to set for the entire selection.

Replace

You might use this function if you have a certain style of symbol in the drawing, for example a city symbol, and you find another one you like better. You can swap all the old symbols out in one shot using Replace.

Purge

Purge gets rid of all the all unused symbol definitions from the drawing.

Import

Import allows us to add symbol definitions from **another file**. Click **Import**. Open the **Files of Type** list to choose the drawing type from which to import symbols, then browse to the other file.

Import PNGs

Import PNGs imports bitmaps and png files and converts them into symbols. For detailed instructions on this function, see **Importing PNGs as Symbols** on page 76.

Convert

Convert allows us to select existing CC3+ files and bring them into the current drawing as symbol definitions.

Symbol Catalog Settings and Filters

After exploring what symbols are and how to manipulate them in catalogs, let's look at selecting symbol catalogs to make them available for use in our drawings.

When we click **Symbol Catalog Settings** we see a list of available symbol catalogs. The list we see here is chosen by the catalog settings filter and master filter. In order to be on the list, the names of catalogs in the display window must include the text defined in both filters.

From this list, we can click on a catalog and CC3+ will load that catalog into the **Symbol Display Window** in the CC3+ interface. It is these catalogs that are also available from the symbol icons on **Symbol Toolbar**. Once the master filter and the catalog settings filter is set to define the family of catalogs we want to use, we can switch between catalogs using the icons on the **Symbol Toolbar**.
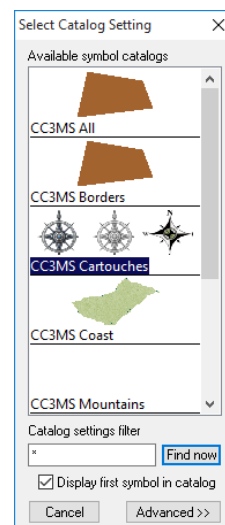
Master Filter

We might think of the **Master Filter Settings** as the list of symbol styles we want to have available in the current drawing.
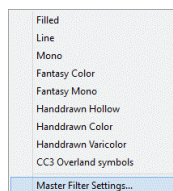
Right click **Symbol Style Toggle** and then note the list of **catalog styles** there. Select **Master Filter Settings**.

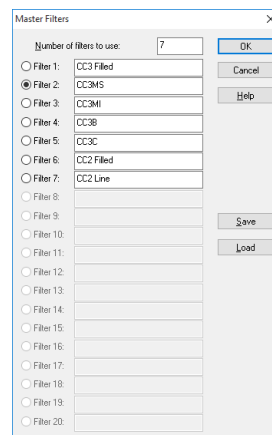We can edit, save and load different master filter settings though this **Master Filters** dialog. The currently selected master filter is used when we click **Symbol Catalog Settings**. In the example shown here, the master filter selected is 'CC3MS'. When we click **Symbol Catalog Settings**, the settings will look through all **available catalogs** with "CC3MS" in the text.

Number of filters to use

The value in this field controls the number of active filters.

Filter 1, Filter 2, etc

These are the catalog filters that are available in this **Master Filter**. When we click **Symbol Style Toggle**, it moves on to the next active filter in this list. When we reach the last filter on the list, it switches to the first again.
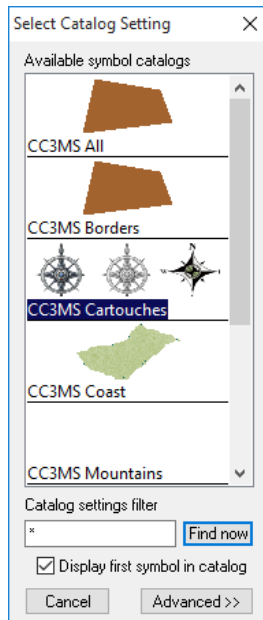
Save

Clicking **Save** allows us to save the currently selected master filter settings.

Load

When we click **Load**, we open the **Load master filter settings** dialog. From the list here, we can load a **new set** of master filter settings.
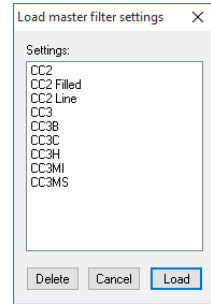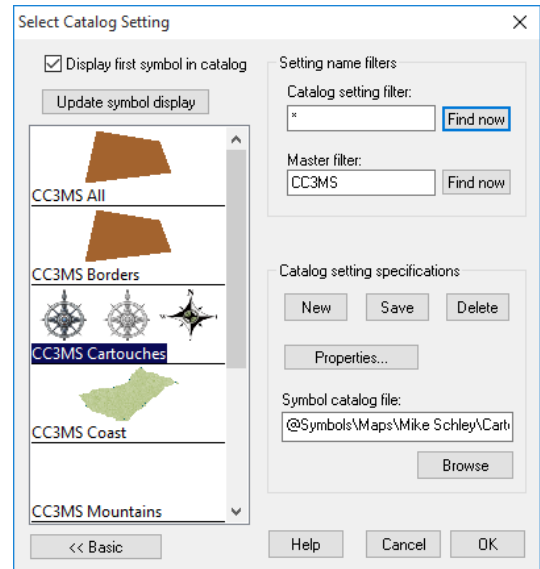
Symbol Catalog Settings

When we click **Symbol Catalog Settings** , the **Select Catalog Setting** dialog opens. The catalogs in this list are the catalogs currently available for use in the drawing. In this example, **CC3** is the current master filter, and we see in this dialog that * is the current **Catalog settings filter**. With these filters—master filter plus catalog settings filter--the **Select Catalog Setting** list shows us all (*) catalogs those name contains CC3. In this **Catalog settings filter**, we could type a keyword, such as VEGETATION then click **Find Now** to find all catalogs that have Vegetation and **CC3** in the catalog name.

Display first symbol in catalog

With this box checked, the list will show the first symbols in the catalogs. If the box is not checked, the **Available symbol catalogs** window displays a list of catalog names only.

Advanced>>

If we click **Advanced**>>, we expand the **Select Catalog Setting** dialog.

From this expanded dialog, we can change the master filter and create new catalog settings.

Just as a demonstration of the **Setting name filters**, let's change the filters to see all vegetation catalogs. In **Catalog setting filter**, type **Vegetation**, and in **Master filter**, type ***. Click **Find Now**. With the filters set this way, we see a list of all vegetation catalogs regardless of what style.
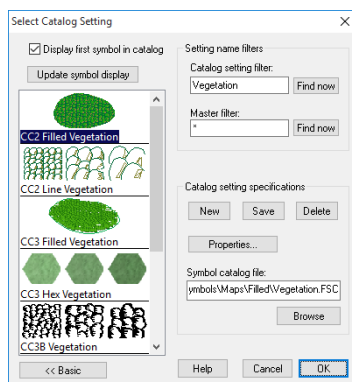
New Setting

It is usually best, to select one of the existing ones first, as the new one will be based on this. Make sure to use a name that fits the current master filter. If the name doesn't fit the current master filter, the new setting will not show up in the list because it will get filtered out.

New

Click **New** to add a new catalog setting filter based on the existing one. When the **Save Current Settings As** dialog opens, type in a name for the **new setting**.

Save

Clicking **Save** saves the current catalog settings.

Delete

Clicking **Delete** removes a catalog setting. Note that this may make predefined symbol settings non-functioning.

Properties

Clicking **Properties** opens the **Properties** dialog. In the dialog, we can predefine what **Status bar** settings to use for a catalog. We can define what color, fill style, line style and layer that symbols in the catalog will use.

Symbol catalog file

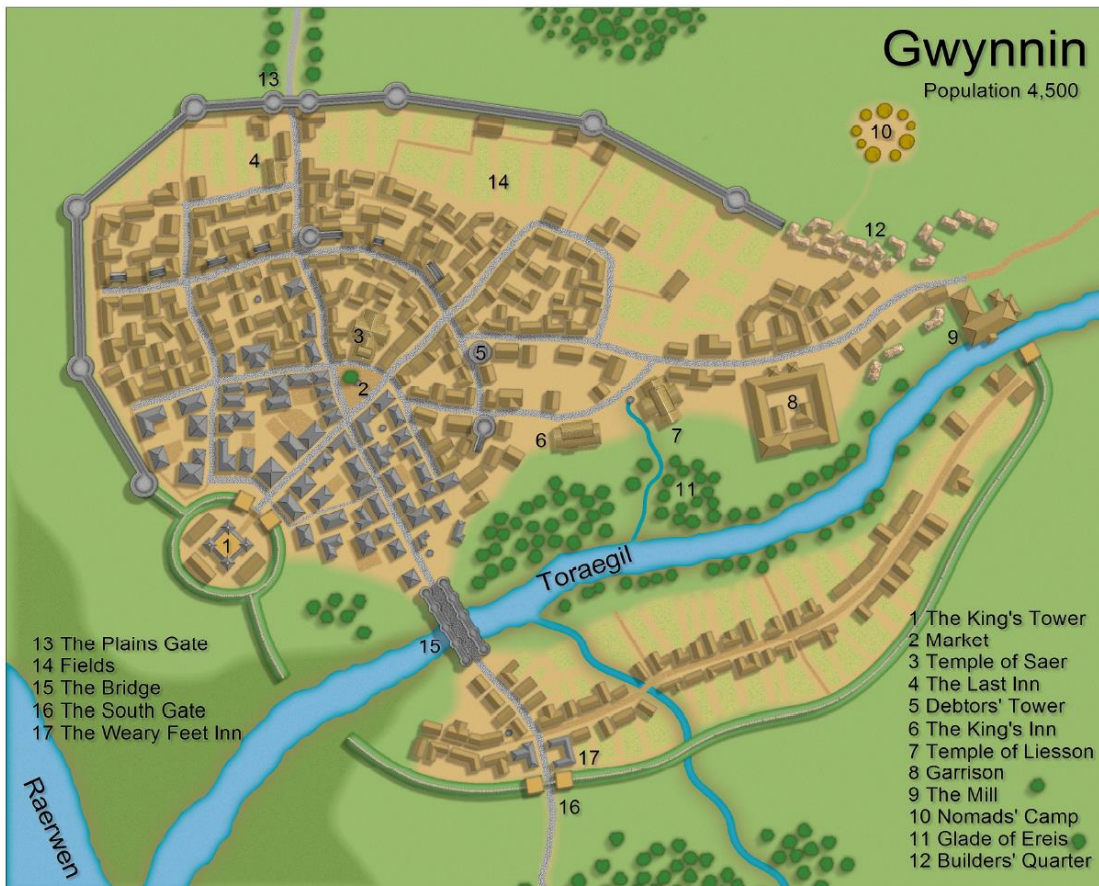Click **Browse** to choose a symbol **catalog file**.

<<**Basic**

Clicking <<**Basic** closes the expanded view of the **Select Catalog Setting** dialog and returns to the basic view.

Symbols and Symbol Management Review

- There are two 'parts' of a symbol, the definition and the reference.

- The symbol definition is a hidden entity in the drawing. There is only one definition per unique symbol name in a drawing.

- The symbol reference is the displayed image of its definition. There can be many symbol references in the drawing.

- Create new symbols in a blank template to avoid having extraneous entities in the symbol definition.

- Symbol catalogs can be viewed and manipulated in the **Symbol Manager**.

- **Master filters** and **Catalog Setting Filters** determine which catalogs are available for use when we click **Symbol Style Toggle** and **Symbol Catalog Settings**.

Catalog File

Using the @ character in the field represents your CC3+ data folder.

Gwynnin
Population 4,500

13 The Plains Gate
14 Fields
15 The Bridge
16 The South Gate
17 The Weary Feet Inn

1 The King's Tower
2 Market
3 Temple of Saer
4 The Last Inn
5 Debtors' Tower
6 The King's Inn
7 Temple of Liesson
8 Garrison
9 The Mill
10 Nomads' Camp
11 Glade of Ereis
12 Builders' Quarter

Gwynnin

Gwynnin was created by **Ralf Schemmann** in **CC3** with the **City Designer 3™** add-on.

This style is one of the styles provided in the City Designer 3 addon.

CAMPAIGN CARTOGRAPHER 3+

DRAWING TOOLS

Two Entities

If the tool adds two entities, the entity underneath is usually solid filled, although it doesn't have to be, and the entity on top can be an outline or even a symbol fill or hatch style. The entities are stacked on top of each other.

Landmass Tool

Once you have selected the tool, observe the Command Prompt to see what you need to do. Usually, you just click points to add your entity. Some tools will give you an edit ability with which you can edit an existing entity. The Command Prompt will show you these options.

Select Drawing Tool

Also note that many drawing tools are available directly in the Symbol Catalog Window. For example, if you click **Coast/Sea** 🚢, the Symbol Catalog Window will contain both symbols and drawing tools related to sea/coastal features.

Drawing Tools

Be aware that not all drawing tools are compatible with all templates. Some drawing tools are created for specific templates and using them in templates for which they are not intended may produce undesirable results.

A drawing tool adds either one or two entities to the drawing. Each tool has most or all the properties of the desired entity already set so all the user has to do is select the tool and draw.

CC3+ has shortcuts to some of these tools – the Overland mapping buttons for example. Likewise, most add-ons have their own drawing tool buttons and drawing tools. There are a number of sets of drawing tools in different styles, and each template has its own default style which you can set from **Drawing Properties** 📑 .

Landmass | **Sea**
Contour Line | **River**
Road | **Terrain**

Selecting a Drawing Tool

To accept the default, simply click on the shortcut to the tool that you wish. For example, in a CC3 Overland template, clicking on **Default Landmass** 🟢 will give you the default CC3 Overland landmass tool. Right clicking on the button will open the **Select Drawing Tool** dialog.

Select Drawing Tool

From here, you can select one of the other landmass tools that meet the filter criteria or you can change the style and filter to display other drawing tools.

Tool name filter

Type a different **Tool name filter**, then click **Find now** to see other drawing tools. For example, if we type **SEA*** then click **Find now**, we'll see all the sea drawing tools in the selected style. If we simply type * in this field, then click **Find now**, the **Select drawing tool** dialog will display all drawing tools in the selected style.

Display Sample

With this box checked, the **Select drawing tool** dialog will display a thumbnail of the entity the drawing tool will create. Unchecked, the dialog will list the names of the drawing tools with no thumbnail.

Style

Open the drop down list to see the drawing tool styles. Changing the style will change the drawing tools displayed using the **Tool name filter**.

Insert on current sheet

Check this box if you want the drawing tool to over-ride its default sheet setting and add its entities to the current sheet.

Advanced

Clicking **Advanced** opens the **Custom drawing tools** dialog. It is in this dialog which we can edit existing drawing tools or create new ones.

Custom Drawing Tools

Drawing tools make repetitive drawing tasks quick and easy. We can edit existing drawing tools or create new ones custom fit for our necessary tasks. Let's look at the drawing tool options and then we'll create a new tool.
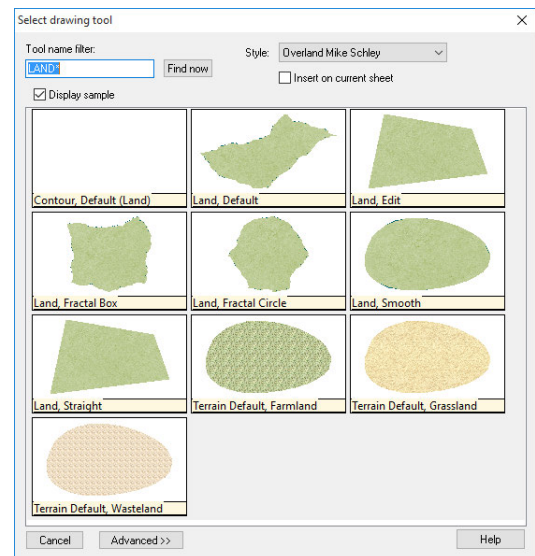
Style

Open this drop down list to choose a drawing tool style. The style will be appropriate for how you wish to use the tool such as in CC3 Overland maps or Dungeon floorplans or cityscapes, for example. Once the style is selected, the **Tool name** list shows all the current drawing tools in that style.

Tool Name

This list contains all the drawing tools available in the style selected.

Draw method

Under **Draw method**, we can select **Path/Polygon**, **Sketch** or **Fractal**. Once the desired draw method is selected, we can click **Options** to input the settings for that method.

Macro command

Drawing tools can be created to execute macros. Macros are an advanced feature of **CC3+**.

Closure

The selection in **Closure** determines whether the drawing tool adds a closed shape such as a landmass, or an open shape such as a road.

Drawing aids

When **Restrict to map border** is checked, the entity drawn with the drawing tool will stop at the map border and not draw past it. **Restrict to map border** ensures that when you click points outside the map border, they attach to the nearest border edge or corner.

When **Front only on layer** is checked, entities are not added last in the drawing list, and on top of everything else. Instead, they are added on top of similar entities.

Open the drop down list for **Attach mode** to select the desired attach method for the drawing tool.

Outline

Clicking **Outline** opens the **Outline properties** dialog. In this dialog, we can specify whether the entity created by our custom drawing tool has an outline, if so what color the outline will be, and whether that outline is a separate entity or not.

Properties

Clicking **Properties** opens the **Custom tool properties** dialog. In this dialog, we set up what the **Status** bar settings will be for the tool. We can control the color, line style, line width layer and fill style of the entity created with the draw tool. These properties can be fixed, or they can match those of the current drawing settings.

Sample Width

In this field, we can type in a value for the sample width and then click **Upd** to update the thumbnail in the visual display.
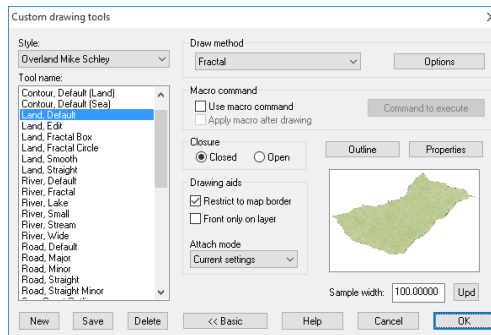
New

Clicking **New** allows us to define a new drawing tool based on the settings that are currently displayed in the **Custom drawing tool** dialog.

Save

Save saves the current settings in the current tool name. There is no prompting to save the tool.

Delete

Clicking **Delete** will delete the drawing tool currently selected in the **Tool name** list.

Drawing Tool Style

This setting is saved with the drawing. You can adjust it here, or in Drawing Properties. When you next open the drawing, it will use this value.

Map Border

In order for this to work properly, there must be a map border entity on the MAP BORDER layer in the drawing.

A map border entity is a series of simple lines or a box on the MAP BORDER layer. These serves to define the edge of the map as far as drawing tools are concerned.

On Top

For example, if you were to add a new landmass, it would appear below map symbols and contour regions, but on top of other landmass entities. This is useful for adding entities such as landmasses since no matter when you add a landmass to the drawing, you'll never want it to cover terrain symbols, vegetation or structure symbols.

Attach Method

If the tool is set up to use an attach mode, it will use the current mode selected using the Attach button.

Basic

When we click **Basic**, the **Custom drawing tool** dialog closes and returns us to the **Select Drawing tool** dialog.

Editing a Drawing Tool

Editing an existing drawing tool is nothing more than selecting the drawing tool in the **Tool name** list, and then changing the properties as we wish. Once the desired changes have been made, click **Save**.
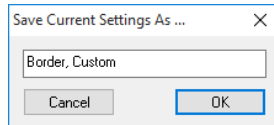
Creating a Custom Drawing Tool

Creating a new drawing tool is almost as easy as editing an existing tool. First choose an existing drawing tool that is close to what we want, change the properties as we desire, then click **New** to name our new drawing tool.

Let's create a new Political Border drawing tool. The existing tool creates an open path. Let's add a drawing tool to our collection that creates a closed path tool.

Closed Path

There is already a Closed Border drawing tool, but if you check it out, it creates a filled polygon. We want just a non-filled path.

1. Right click **All map drawing tools** 🛠. In the **Select Drawing Tool** dialog, click **Advanced>>**.

2. In the **Tool name** list, select **Border, Default**.

3. In **Closure**, click **Closed**

4. Click **Properties**. In the **Custom Tool Properties** dialog, open the drop down list for **Use fill Style**. Select **Hollow**. Click **OK**.

5. Open the drop down list for **Attach mode**, then select **Current settings**.

6. Click **New**. In the **Save Current Settings as** dialog, type **Border, Custom**. Click **OK**.

7. Click **OK**. Hit `ESC`.

We now have a brand new Political Border tool that will create a closed border in our drawings.
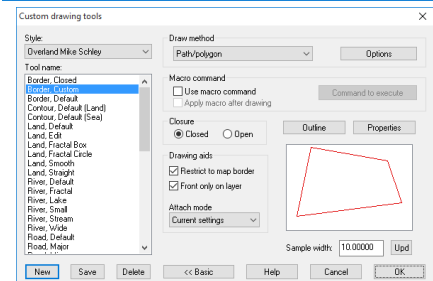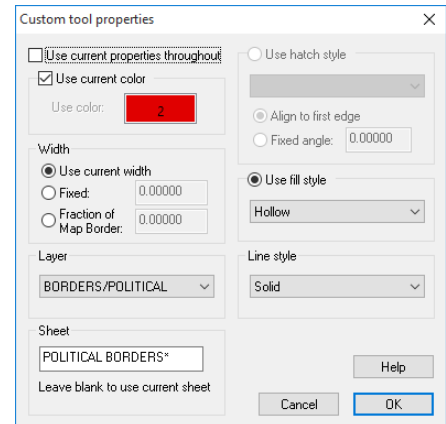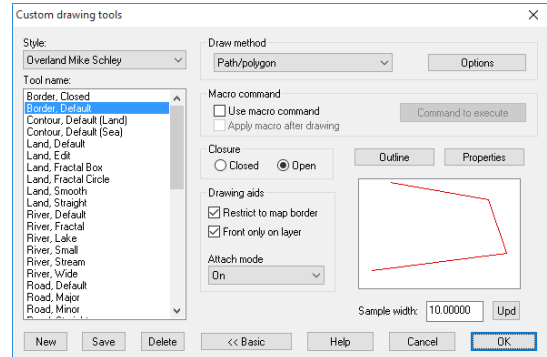
Creating a Macro Drawing Tool

CC3+ has simple macro language that enables us to automate repetitive tasks. Drawing tools are one way we can run macros in CC3+.

Macros

A macro is a list of commands that can loop, store variables and control some dialog settings. Though macros are considered an advanced feature of CC3+, a simple macro will be used here to illustrate macro drawing tools.

Start by opening an existing Overland map or by creating a new Overland drawing. Before we begin, let's set the text properties to something other than what the drawing tool will do so that we can see that the tool sets the properties for us.

1. Click **Text Specs** 🅰. In the **Text Properties** dialog, set the height to **1** and the font to **Arial**. Click **OK**.
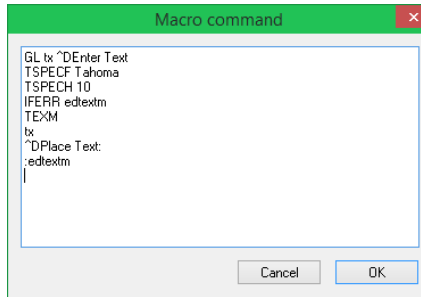
Now, let's create a drawing tool that will add text to our drawing that has a height of 10 and uses Verdana font.

2. Click **All map drawing tools** ⚒, then click **Advanced**.

3. In the **Custom drawing tools** dialog, click **New**.

4. Type in a name for the new drawing tool. In our example, we named the tool **Text, Default**. Click **OK**.

5. In the **Macro Command** section, click to put a check in the box for **Use macro command**. Click **Command to execute**.

6. In the **Macro Command** dialog, erase anything that might be there, then type these lines:
```
GL tx ^DEnter Text
TSPECF Tahoma
TSPECH 10
IFERR edtextm
TEXM
tx
^DPlace Text:
:edtextm
<blank line>
```
Be sure to hit ⌷ ENTER ⌷ after the last line is typed. Click **OK**.

7. In the **Custom drawing tools** dialog, click **Save** then click **OK**.
   Our new drawing tool is created, and if we look at the **Command Prompt**, we see that we're ready to add text. The **Command Prompt** reads **Enter Text**.

8. Type text for your label at the **Command Prompt**. For this exercise, use something fictitious, such as My Map or Text Test. After the text is typed into the **Command Prompt**, hit ⌷ ENTER ⌷ . The **Command Prompt** now reads **Place Text:**. Click to place the text label into the drawing. We can click to repeat the macro if we want to continue to add labels to the drawing, or we can hit ⌷ ESC ⌷ to end the command.

If we look again at Text Properties, we see that they are now set to a height of **10** and the font is Tahoma. We could have the drawing tool macro also set other properties such as color; and we can have a separate drawing tool for each text label style that we'll use in the drawing.

Creating a New Set of Drawing Tools

We've seen how easy it is to edit existing drawing tools and to create our own. We can now explore the creation of a new set of drawing tools in a desired style. The easiest way to do this is to create a new folder in System/Drawtools and name it the new style. Into this folder, copy the .dto files from one of the other **CC3**+ styles which closely match the desired new style. Once the draw tools are in the new style's folder, open the tools and edit them with the fill styles, colors, line styles, etc, that will be used to make up the new mapping style.

Drawing Tools Review

- Drawing tools make repetitive drawing task quick and easy.

- Editing existing drawing tools by selecting the tool, changing the tool's properties, and then clicking **Save**.

- Create new drawing tools by selecting a tool that is close to what we want, changing the tool's properties, and then clicking **New** to assign it a new name.

- Create a new drawing tool style by copying existing tools to a new folder and then editing the tools to suit the new style.

Macro Lines

These commands set the Command Prompt prompts, set the text height and font and prompt for text placement.

Last Line

Adding the blank line at the end of the macro lets CC3+ know the macro has ended.

Closely Match

If the new style will be Overland, pick an Overland drawing tool set which you feel would be the easiest to edit to the new style. Likewise, if the new style is a floorplan, pick an existing floorplan or dungeon drawing tool set to copy over and edit.

OTHER TOOLS

The preceding chapters have provided a detail view on the tools and features you are most likely to spend most of your time with when using Campaign Cartographer 3+, but there are other tools as well, so we will spend this chapter to have a brief look at these tools. You can find more information about these tools in the CC3+ help system, and more details and tutorials can also be found in the Tome of Ultimate Mapping.
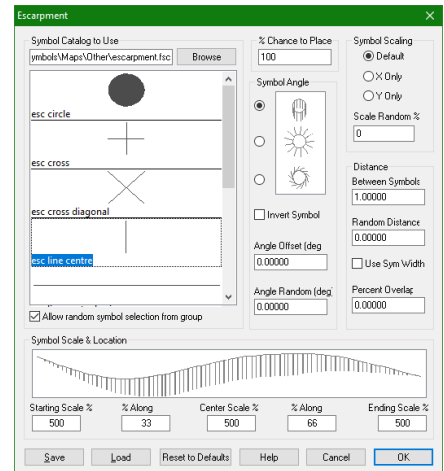
Symbols Along

The symbols along command is used to have symbols placed automatically along a path, and can be used in many different scenarios, such as weather fronts, escarpments, railroad tracks and much more.

The command allows you to specify the symbol to use, and how to scale it along the path. It can be the same size along the entirety of the path, or it can increase in size toward the middle and then decrease again, or anything similar.

You can find the command by selecting **Symbols Along** from the **Draw** menu, this will bring up the **Escarpment** dialog.

Here is a brief breakdown of the sections in the dialog

- **Symbol Catalog to Use**: Here you can select which symbol catalog and symbol to use. You can only select one symbol, but if that symbol is part of a random group, you can enable the option to have it pick randomly from that group.

- **% Chance to place**: Symbols are divided evenly along the path. Use this to reduce the chance for each symbol to be placed, causing random gaps.

- **Symbol Angle**: This controls how the symbol will be rotated in relation to the direction of the guideline at each placement point

- **Symbol Scaling** controls how the symbol will be scaled along the path, some symbols may be designed to be only scaled in one direction.

- **Distance** controls the distance between the symbols on the path

- **Symbol Scale & Location**: Here you can define the starting, center and ending scale of the symbols. The starting scale is the size of the symbol at the beginning of the path (relative to the symbol's normal size), then the symbol will gradually change size until they reach the center of the guideline. They will keep the same size along the entire center section, before they will then again change size until they reach the ending scale at the end of the path. The two %along boxes define how far along the path the center section is.

To use this command, make sure to draw your guideline first, then start the command, fill in your settings, and when you click ok, select your path as prompted by the command line, and finish with the regular **Do It**.
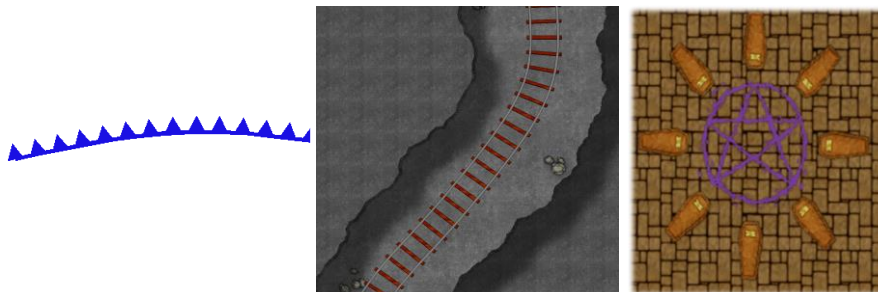
Examples

Escarpment

This original command was named the Escarpment command because that was what it was made to draw, but it has way more potential than that.

Random Group

See the chapter Symbol is one of a collection on page 78 for details about symbol groups and random selection.
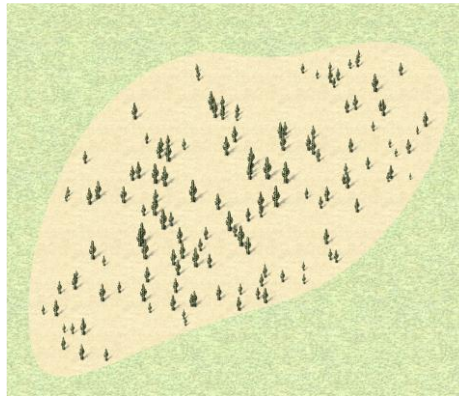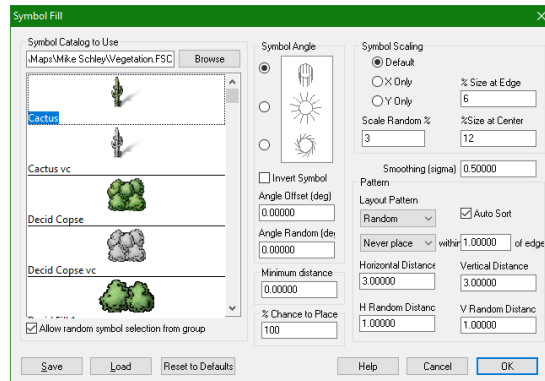
Symbols in Area

Symbols in Area is similar to Symbols Along, but it will fill a polygon with symbols, using random placement.

Starting this command will bring up a dialog very similar to the Escarpment Dialog:

The main difference here is that sizing is done not along the path, but distance from the edge, and that you can specify a layout pattern, such as Random to fill an area randomly with symbols. The distance options will control how tightly packed this area will be.

To use this command, first draw a polygon covering the area you wish to fill (unless this area is already represented by a polygon, such as a terrain feature), then go to **Draw → Symbols in Area**, assign your settings, hit OK and then select the polygon as prompted by the command line, and finish with **Do It** as usual.

Fill with Symbols

The fill with symbols is a more technical command, originally made for filling forests with tree symbols automatically. Compared to the Symbols Inside command, it is primarily designed to fill the area tightly packed, and use a very regular placement. The main advantage to this command is the ability to specify several symbols.

This command is stared from **Draw → Fill with Symbols**, which will bring up the **Forest Options** dialog.

This dialog allows you to select the symbol catalog to use, and then provide up to 10 symbols to use. The Unit Size is intended to be the size of a single symbol, and the CX/CY setting for each symbol in this list is a multiple of this size to tell CC3+ how large the symbol is. The Single checkbox is used for symbols that looks normal when placed at the edge of the area, the other symbols can only be used in the interior. There are a lot of predefined settings available, just hit the **Load** button to access them.
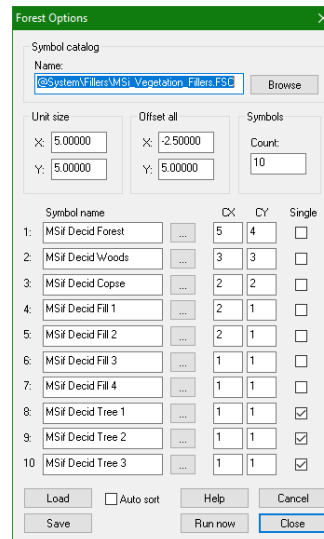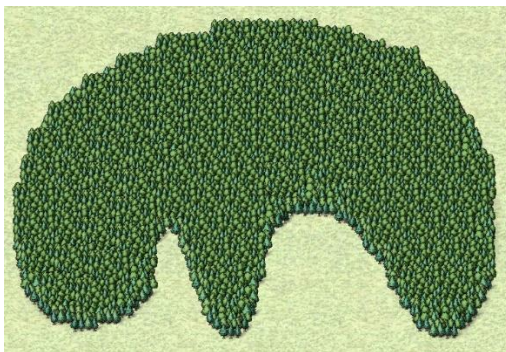
Note that the most common way to use this command is through one of the predefined forest drawing tools in CC3+ which will call this command automatically as part of the drawing process, but you can also start it manually. In that case, make sure to draw a polygon for it to fill before starting the command, since using it will require you to select a polygon to fill.

Forest Options

Just as with the Symbols Along command, this command was named for its original purpose. Drawing forests are still it's main purpose, but it can also be used with other kinds of symbols that require regular placement.

CREATING A FLOORPLAN

CC3 can be used to create floorplans with the same ease with which it creates overland maps. Let's make a basic floorplan.

Basic Floorplan

Our floorplan for this example will be simple, but you will see the potential for making large, intricate floorplans quickly and easily with the dungeon drawing tools.

5' Grid, 1 Snap

Grid and Snap make drawing floorplans quick and easy. The cursor will 'snap' to the nearest grid point—in this case, every 5 feet is a grid point.

Draw a Floorplan

Note how the Snap feature works to guide the cursor and allows you to make clean corners while the grid allows you to quickly judge size.

Align Itself

The door symbol is a Smart symbol. These symbols will automatically rotate and scale to fit the entities you attach them to.

Place the Sconce

Like the door symbol, the scone aligns itself to the wall. Unlike the door symbol, however, placing the sconce is a two part process. The first click sets the location for the sconce. Once the location is set, moving the cursor will slide the sconce away from the wall. The second click places the symbol. This two click process allows us to make adjustments for wall thickness prior to placing the symbol into the drawing. Note also that we could leave Snap enabled in order to precisely place the scone symbols. Once the location of the symbol is set, click to disable Snap before moving the symbol out to accommodate wall thickness. Snap can be enabled or disabled in mid command or in the middle of an action such as placing symbols.

1. Click **New** .

   In the **New Drawing Wizard**, select **Dungeons**, then select **Decide Settings Myself**. Click **Next**. Select **CC3 Dungeon**. Click **Next**. Input template size **100 x 80,** then click **Finish**. Name your drawing, then click **Save**.

2. Make sure that **Snap** and **Grid** are enabled (buttons should be depressed). Right click on **Grid**, then select **5' Grid, 1 Snap**. Click **OK**.

3. Click **All map drawing tools** , then select **Room, Stone wall, Chequered Floor**.
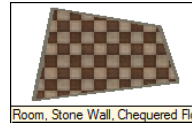
4. Using the visible grid as a guide, draw a floorplan. The sample drawing shows a simple 2 room floorplan with a connecting corridor. Click in the view window to begin. Right click to end the command once the floorplan is complete.
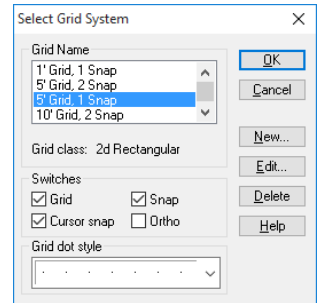
5. From the **Symbol Display Window**, select **Door Wood**.

   As you hover the symbol over the drawing, note that it aligns itself to the walls. Click to place the door at a location of your choosing. Note that when placed into the drawing, the door automatically cuts the wall.

6. Click **Snap** to disable the snap feature.

7. Scroll down in the Symbol Display window. Click to select **Sconce with Torch3**.

   As you hover the sconce symbol over the drawing, note that it also aligns itself to the walls. Click to place the sconce at a location of your choosing. Place as many scones are you feel are needed for your floorplan.

8. From the **Symbol Display Window**, select symbols to add to your drawing. Enable or disable **Snap** as needed to position the symbols as desired.

9. Click **Sheets and Effects** .

   Click to put a check in the **Activate Sheet Effects** box, then click **OK**.

This is a simple floorplan, but the tools are here to do much grander things. Explore the other dungeon tools found in **All map drawing tools** to complete

the scene by adding terrain features and outdoor elements to the drawing. Text can be added to the drawing in the same way we added text to our overland map.

Creating a Floorplan Review

- Use **Grid** and **Snap** to make creating Floorplans quick and easy.

- **Grid** and **Snap** can be enabled or disabled in mid action or in mid command.

- Smart symbols can align themselves to walls or cut openings in the walls for us.

A section of Hermach – Dungeon Map

This drawing was created by **ProFantasy Software** in **DD3** based on an old **DD2** map of the same region.

This style is available from the Dungeon Designer 3 addon.

CONVERTING YOUR OLD MAPS

You have **CC3+** and you've gone through the tutorials. Now you're ready to take your old world and remap it in **CC3+**. But where to start?

Converting CC2, CC2 Pro and CC3 maps to CC3+

If your old maps are in FCW files from a previous version of Campaign Cartographer prior to **CC3**, the conversion is easy. Open your old FCW file in **CC3+**, then from the File menu, select **CC2 to CC3** conversion.

This converts maps created in CC2, CC2 Pro and earlier add-ons into **CC3+** drawings sheets and draw tools. It moves entities to the appropriate sheet by looking at their layers. Any entities on unrecognized layers are placed on a new MISCELLANEOUS sheet.

If your map was made in **CC3**, it already works fine in **CC3+** with one exception, because of the new **CC3+** data directory location, automatic resolution of bitmaps doesn't work correctly. You can type the command FFIX on the command line to upgrade all raster references. Note that once you do this, the map will not work in **CC3** anymore.

What do you do, however, when your old maps are hand drawn on paper or they're in a raster format such as a BMP or a JPG? How do we get them into an FCW file?

Getting Hand Drawn Maps into CC3+

If the maps are drawn on paper, scan them into a BMP, JPG or PNG image. We'll take that raster file and import it into a template. Once the map is in a template and sized properly, you can use **CC3+**'s drawing tools to trace the coasts, add the terrain features and place your cities and landmarks.

Begin with a BMP, JPG or a PNG of the old map. For this exercise, we'll use a JPG of an old **CC2 Pro** map and put it on a 125x100 **CC3** Overland template.

1. Click **New** 📄.

    In the **New Drawing Wizard**, select map type **Overland** and click to put the radio button in **Decide settings myself**. Click **Next**. Select **CC3 Standard Overland**. Click **Next**. For the dimensions, enter width **125** and height **100**. Click **Finish**. Type a name for your map, then click **Save**.
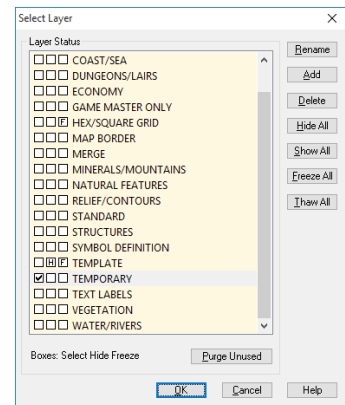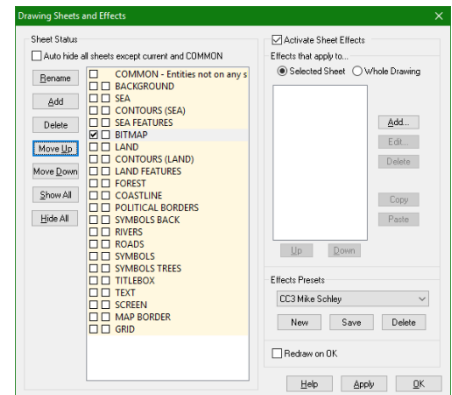
Now we have a new template. Let's prepare it to receive the JPG file.

2. Click **Sheets and Effects** 🗂, then click **Add**.

    Type a name for new sheet. For this example, we'll use the sheet name **BITMAP**. Click **OK**. Click **Move Up** several times until our new BITMAP sheet is right above the LAND sheet on the **Sheets** list. Be sure **BITMAP** is selected as the current sheet, then click **OK**.

3. Click the **Layers indicator** L: RELIEF/CONTOURS.

    Select **TEMPORARY** as the current layer, then click **OK**.

Sidebar

Convert Maps

When the conversion is over, we recommend that you click Sheets and Effects. Hide all but the MISCELLANEOUS sheet. Right click Sheets and Effects, then select Move to Sheet. Select entities to move from the MISCELLANEOUS sheet to appropriate sheets, and repeat the process until the MISCELLANEOUS is empty. You can then show all the sheets. If any of your entities are obscured by other entities, you'll need to use Move to Sheet to move them above whatever it is that is hiding them.

Scan the Map

If you don't own a scanner or have access to one, check with your local print shop. They sometimes have scanning services to convert images on paper into electronic files.

Above the LAND Sheet

Positioning the bitmap's sheet below the LAND sheet will allow us to see the old map image while we draw the landmass. Once the landmass is drawn, the bitmap's sheet can be repositioned so it is above the landmass' sheet so we can see it while we add the terrain features.

Current Layer

The TEMPORARY layer is a good choice because the image will not have a permanent home in the drawing. Once the map is traced and the terrain features, towns and landmarks are in, you would delete the old map image from the template.

These steps set up a place to put our bitmap. Let's proceed with importing the file.

4. From the **Draw** menu, select **Insert File**.
    Browse to CC3+'s **Tutorials/UserManual** folder, then select **Piadra_Gate.JPG**. Click **Open**. Tell CC3+ to use an absolute path, and instead of clicking to place the image, type 0, 0 then hit ENTER. Type 125, 100 then hit ENTER.

Our old map is in the template now, but we can see that it needs to be positioned and scaled properly. We'll do that next.

On every CC3+ template, the coordinates **0,0** are in the lower left corner inside the frame. We inserted the map at 0,0, but we inserted the lower left corner of the image file there. We see that the lower left corner of the old map itself is at about **3.3,4.2**. Let's position the image so the corner of the map matches the corner of the template frame.

5. Click **Zoom Window** 🔍, then zoom in close to the lower left corner of the template.

6. Click **Move** ⬚, then click the edge of the bitmap to select it. Right click, then select **Do it**. With the crosshairs, click in the lower left corner of the old map. The old map image is now on the cursor. Type **0,0** then hit ENTER. We've now placed the lower left corner of the old map at the coordinate **0,0** in our template.
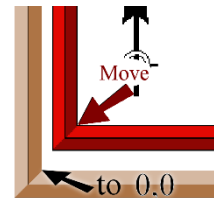
7. Click **Zoom Extents** 🔍.

To finish the positioning of the old map image, let's scale it. We'll use the scale bar in the bitmap image as our reference.
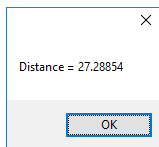
8. From the **Info** menu, select **Distance**.
    On the old map's scale bar, click on first tick which would be **0** and then click on the last tick which would be **30**. Distance shows us that the scale bar is **27.3 miles** long. Let's resize the old map image. Click **OK**.

Distance = 27.28854

OK

9. Click **Scale** ⬚ then click the edge of the old map image to select it. Right click, then select **Do it**. The Command Prompt is looking for a scale origin. Type **0,0** then hit ENTER. The Command Prompt is now looking for a 'Scale to' value. Let's have CC3+ do the math for us. Type **30/27.3** then hit ENTER.

Our old map is now properly sized and positioned to begin tracing. With the bitmap file on its own sheet, we can draw the landmass, then bump the bitmap's sheet forward. We can add terrain features and then bump the bitmap's sheet forward. We'd then add symbols and rivers;
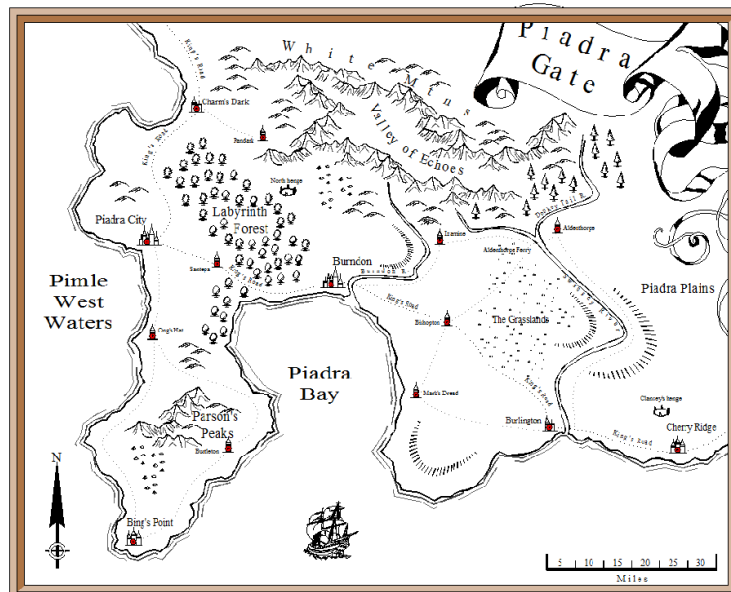
Type 0,0

We typed the coordinates in but we could have used the crosshairs on the cursor to insert the bitmap. The initial placement of the image does not need to be precise. Just slap it in there. We'll position it and scale it properly once it has been inserted.

Select it

The bitmap won't highlight to show that it has been selected. Watch the Command Prompt. When you click to select the bitmap, the Command Prompt should show that 1 entity has been selected. If you have problems selecting only the bitmap, try selecting by layer. Remember that our bitmap is the only thing on the TEMPORARY layer. See page 51 for more details about selections.

Reference

Most maps have a scale bar which makes an easy reference for us to properly size the image in the template. If your old hand drawn maps don't have a scale bar, use two points in the map for which you know the distance. For example, you may know the distance between two cities or the distance a landmark is from a village. Use any two points in the map to reference distance.

Do the Math

If we express our scale value as a fraction, CC3+ will calculate it for us. In this case, our reference is 30 miles, but the measured value is 27.3 so we input 30/27.3.

and when we're done, we can delete the BITMAP sheet leaving only the newly completed CC3 map.

Converting Your Old Maps Review

- Convert your old CC2 and CC2 Pro maps to CC3+ drawings by using the conversion in the **File** menu.

- Scan your old hand drawn maps into BMP, JPG or PNG.

- Use the scale bar or use the distance between two known points on the image to scale the image properly in the new template.
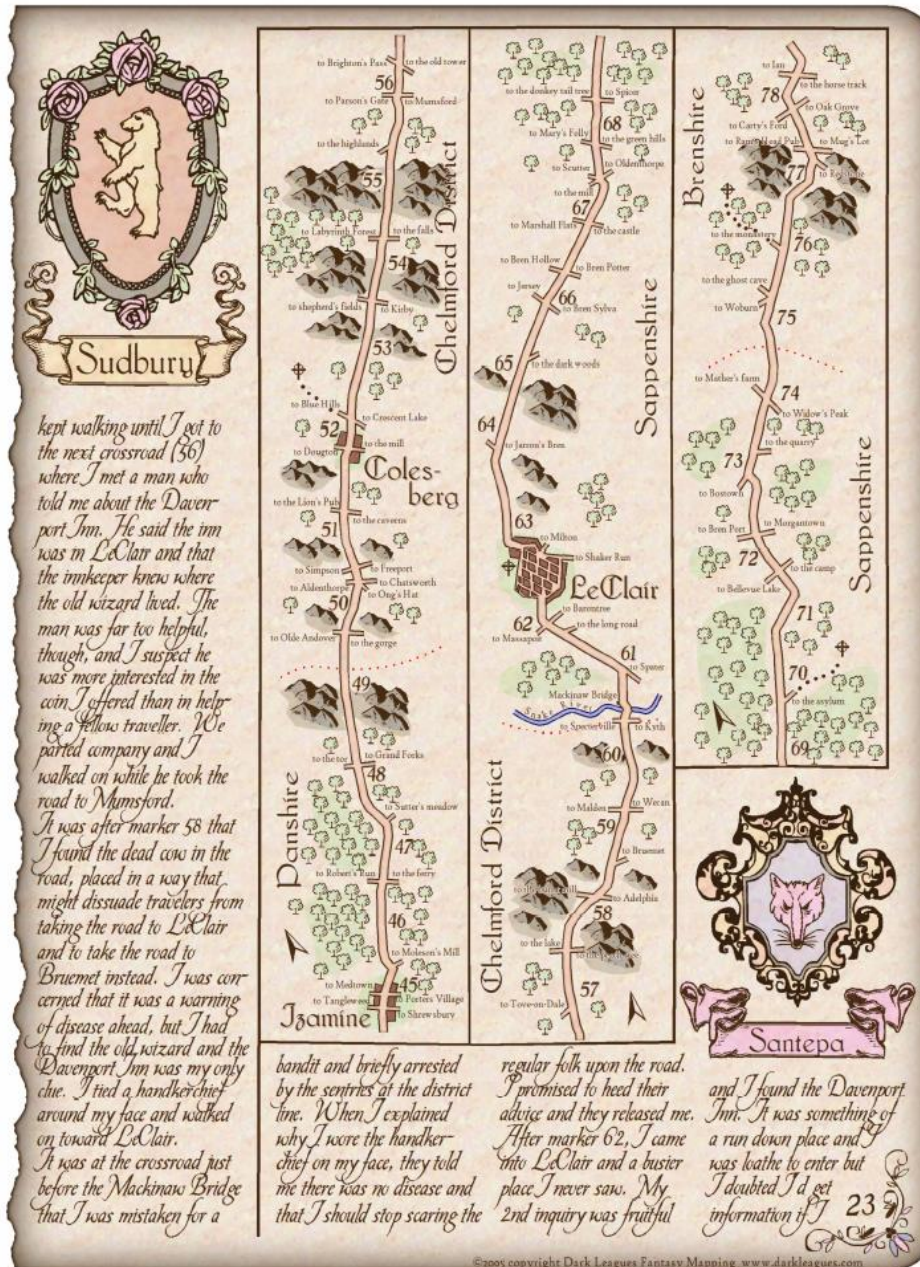
Journal Page 23

This drawing was originally created in **CC2 Pro** by **Allyn Bowker**. It was updated in **CC3**. Journal Page 23 uses techniques described in **Issue 06-Parchment Backgrounds** in **The Cartographer's Annual 2007**.

This style is provided in the Cartographers Annual Volume 1 (http://www.profantasy.com/annual/2007/)

Where To Go From Here

Where the Essentials Guide was a quick start, the User's Guide takes a more in depth look at CC3+ and its features and functions. The documentation provided here gives the user the information needed to create maps and drawings for many of the most common applications. This is not, however, all there is to know about CC3+.

The Help System

CC3+'s Help system is very extensive. From the **Help** menu on the interface, you can access the **Help** files as well as view a Quickstart Guide, view tips, and get contact information for Technical Support.
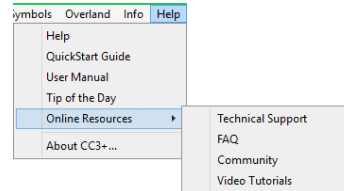
Campaign Cartographer Community

Campaign Cartographer has an active and very helpful community of users whose interests cover a broad range of genres and styles. These friendly folks will be able to answer most of your questions. From our website, you can sign up for a mailing list as well as join a community forum. Check out the **Community** menu on www.profantasy.com for links to the various community elements.

The Tome of Ultimate Mapping

The Tome of Ultimate Mapping is an in-depth guide to Campaign Cartographer and all its addons. This book consists of more than 700 pages of guides, tutorials and tips. Check https://secure.profantasy.com/products/tome.asp for details.

On the Web

When scouring the web for resources, be mindful of the artists' proviso for use of his or her work for your purposes. Please respect artists' rights.

Resources

The availability of resources starts right at our webpage. From the **Downloads** menu and from the **Community** menu, you can access tutorials, download user created symbols to add to your maps and drawings, download user created drawings, and more.

There is a wealth of resources on the web where you can find symbols, artwork and textures to use for your maps and drawings. The list provided here is just a small beginning to all that can be found.

atlas.monsen.cc

forum.profantasy.com/comments.php?DiscussionID=1230

www.mapsandmore.com

www.freetextures.org

www.imageafter.com

www.davegh.com

INDEX

The World of Dyra

The World of Dyra map was created in **CC3** by **Ralf Schemmann**. The map uses techniques and includes elements provided in **Issue 01-Mercator** Style Pack of **The Cartographer's Annual 2007**.

This style is provided in the Cartographers Annual Volume 1 (http://www.profantasy.com/annual/2007/)